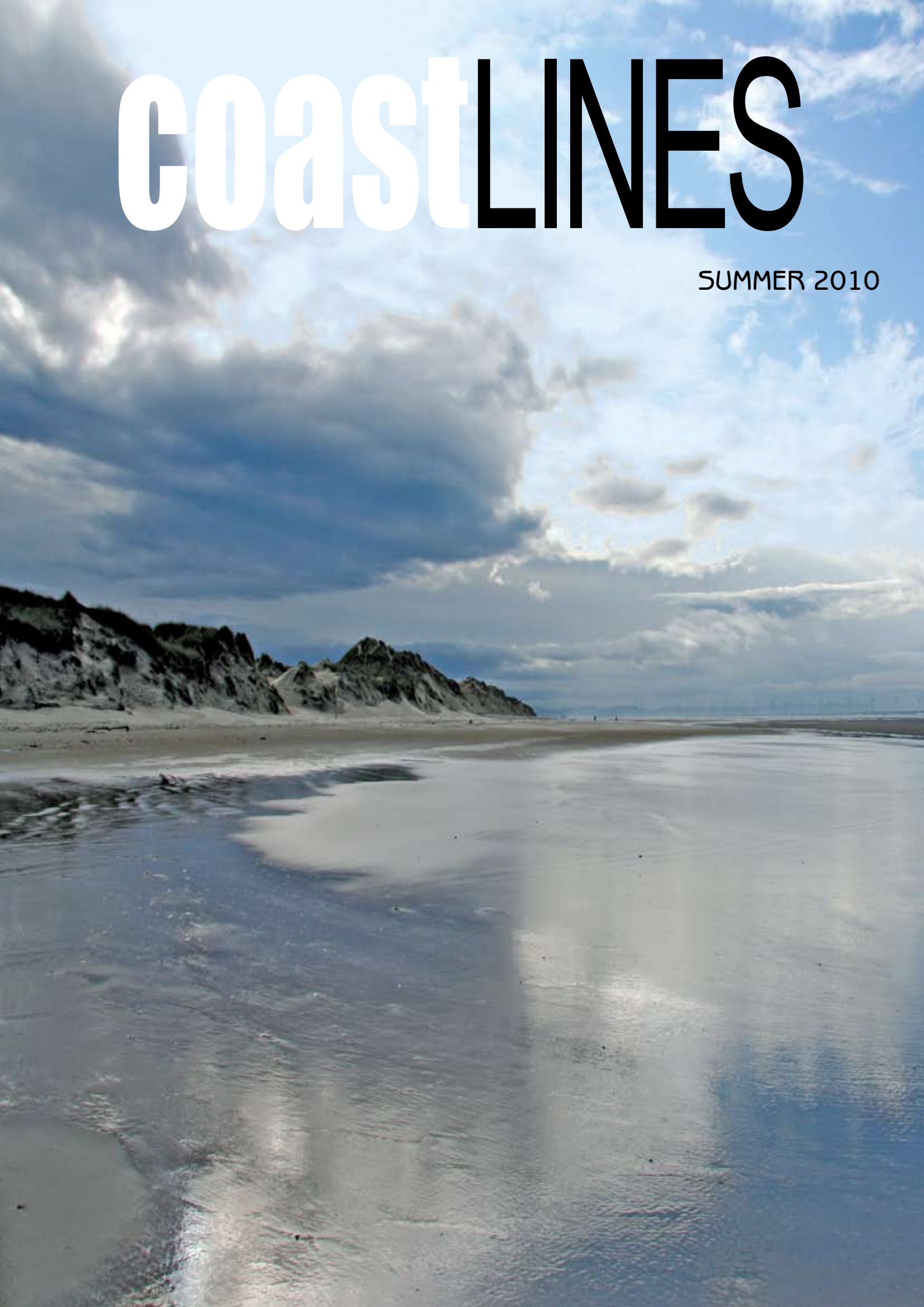


# coastLINES

SUMMER 2010





Coastlines is the newsletter of the Sefton Coast Partnership. Coastlines aims to provide information to local people and visitors about the natural value of the coastline, the current policies for conservation management and other topical issues. The Sefton Coast Partnership includes Sefton Council, The National Trust, Natural England, The Wildlife Trust, North West Reserve Forces and Cadets Association, RSPB and local community and interest groups in a co-operative partnership.

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Information on sites, events and guided walks can be obtained from the following partners:  
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0151 934 2967  
The National Trust 01704 878591  
Natural England 01704 578774  
RSPB 01704 536378  
Wildlife Trust 0151 920 3769

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Front cover: **Graham Lymbery**

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Welcome to the Summer edition of Coastlines. The coast is always changing and in this edition many of the articles will focus on adaptation to coastal change.

Operational and organisational staff changes have taken place and we also have lots to celebrate - the pathfinder project, national book award, flying centenary, promising news about the Reds, and the forthcoming 150 years celebrations at Altcar.

There are plenty of things to see and do on our coast for both children and families alike so look out for these too.

We hope you enjoy reading this bumper edition of Coastlines.

Sefton Council is working with the North West Coastal Forum to deliver an exciting new project exploring coastal sustainability. SUSTAIN (Assessing sustainability and strengthening operational policies) is a 3-year project part-funded by the European Regional Development Fund through the INTERREG IVC programme. It is a Regional Initiative addressing environment and risk prevention and the sub-theme water management and will contribute to delivery of Europe's EU Sustainable Development Strategy.

Caroline Salthouse from North West Coastal Forum said, *"The partners in this exciting project have come together to address the challenges that coastal communities face from issues like climate change, pressure on natural resources and the need for economic, social and cultural well-being by providing a new and innovative tool that can be used by the communities to enable them to live in and manage their own surroundings sustainably."*

The results from the project will be presented at an international conference, to be held in Autumn 2012 in Sefton. This offers an opportunity to showcase the achievements of the North West and for partners within the region to learn from others across the EU.

For more details see the project website <http://www.sustain-eu.net/> (currently under development)



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Paul Nolan

The Sefton Coast Partnership would like to thank Ted Jackson (Lancashire Wildlife Trust) who Chaired his last Board meeting earlier this year, having agreed to take up the position back in 2001 when the Partnership was first formed. We are very grateful to Ted for his commitment over the last 9 years and we wish him well in the future.

We welcome Paul Nolan (*The Mersey Forest*) as our new Chair and Professor Annie Worsley (*Edgehill University*) as our Vice Chair, for the next two years.

Message from Paul Nolan:

*"With so many excellent and knowledgeable people on the Partnership I was very surprised (in a good way!) to be asked. I am very much looking forward to playing my role as Chair for the next 2 years and to see that the Partnership's reputation for collaboration in the interest of the coast and its communities continues"*

## Sefton Coast Forum 2009

The 10<sup>th</sup> Annual Forum took place at the Southport Theatre and Convention Centre on 27<sup>th</sup> June 2009. The Forum focussed on the Landscape Partnership Scheme and was well attended



Forum 2009  
@Sefton Council



Workshop: Understanding history on the coast  
@Sefton Council

by people who have an interest in and care about the Sefton Coast. They came along to hear presentations, attend workshops, view displays and on offer was the opportunity to visit, by coach, the various sites involved in the bid for the Heritage Lottery Fund Landscape Partnership Scheme.

The Mayor of Sefton Cllr Alf Doran opened the Forum. Dave McAleavy, Head of Coast and Countryside, gave the opening address, Will Moody, Project Manager for the Sefton Coast Landscape Partnership, presented a short DVD film featuring the project sites, with interviews by key individuals. Graham Barrow, Voluntary Chair of the Kerridge Ridge and Ingersley Vale and Heritage Project in Derbyshire presented some of his projects at Kerridge Ridge, the first LPS in North England, and shared his experiences of running the scheme. The three workshops were lead by Dr Jen Lewis - Understanding the History of the Coast, Rachel Northover - Shaping the Coast, Graham Barrow - Experiencing the Coast. After lunch coaches left for the various sites and despite our 'summer' weather most enjoyed their afternoon visit. Those unable to take part or who wished to remain behind, were given a talk by David Brazendale from University of Liverpool.



Visit to Birkdale NNR despite the showers  
@Sefton Council

## The Sefton Coast Partnership Volunteer Award

At the Forum the Sefton Coast Partnership Board recognised two volunteers who have made an outstanding contribution over many years. The Mayor of Sefton Cllr Alf Doran presented the awards. First to receive his award was Mr Ralph Gregson MBE.



The Mayor of Sefton Cllr Alf Doran presenting awards to Mr Ralph Gregson MBE and Mr Les Baxter  
@Sefton Council

Ralph is a volunteer member of the Sefton Coast Partnership Board and Working Group. He is also Chair of the Tourism and Communications Task Group and has made a considerable contribution to the work of the Sefton Coast Partnership over the years.

Ralph is also Chair of the Birkdale Civic Society and has worked tirelessly to promote the importance of the coast. Ralph and the Birkdale Civic Society played a key role in the development of the Queens Jubilee Nature Trail.

Ralph also represents the Sefton Coast Partnership on the Sefton Borough Partnership, this and all of the above is unpaid and carried out in his own time.

The second award was presented to Mr Les Baxter. Les' voluntary contribution to Sefton's Natural Coast is wide ranging. He mainly works as a regular volunteer for Natural England, helping with practical tasks, but also assists with guided walks, events and monitoring work.

He also has several other invaluable volunteer roles elsewhere; he has carried out weekly Squirrel Pox monitoring at Ravenmeols LNR on behalf of the Lancashire Wildlife Trust. He is Footpaths Secretary for South Sefton, a voluntary advisory role to the Sefton Rights of Way team involving footpath checks, compliance and complaints work.

Les regularly offers additional time to help with practical tasks. He attended a cattle-handling course with the Ainsdale NNR staff so that he could assist with a new grazing programme following the introduction of five Shetland Cattle to the Reserve - this was especially good of Les as he has a fear of cattle.

## Sefton Coast 2010 Forum

This year's forum, "Living with a changing coast" is to showcase how our coast is changing, issues arising from this change and how we live with the changes, now and into the future. The day will follow a story of climate change and our changing coast from the past 10,000 years to 100 years in the future. The day will be broken into four sessions with two speakers per session talking about coastal processes and historic past, managing coastal change at site level, climate change and adaptation - what does it mean for us!

It is a free all-day event and includes refreshments and buffet lunch. Registration is essential and places will be allocated on a first come first served basis. The Forum will be held at Southport Theatre and Convention Centre on the 17<sup>th</sup> July 2010. If you would like to attend then please contact:

**Mrs Lorna Lander at**  
**[Lorna.lander@planning.sefton.gov.uk](mailto:Lorna.lander@planning.sefton.gov.uk)**  
**Or 0151 934 3605**

## Partnership's Lottery Success

While this edition of Coastlines was being prepared, the SCP received an offer of funding from the Heritage Lottery Fund of over one million pounds.

The funding is towards the Landscape Partnership Scheme which we have been developing over the past few years and has been reported in previous editions of Coastlines. It is a two million pound scheme and will involve many of the members of the Sefton Coast Partners working together to deliver various projects that will improve access, habitat and understanding of the coast.

As the partnership has no legal standing, Sefton Council have now kindly agreed to act on the Partnership's behalf to administer the funding and the scheme should get underway shortly.



In 1910, less than a year after Bleriot plane successfully crossed the Channel, Freshfield shore provided one of the earliest flying strips in Britain then known nationally as an 'aerodrome'! There were then only 15 licensed fliers in the country and five of them had planes and hangars at Freshfield.

The first successful flight at Freshfield was on 14th May 1910. Cecil Patterson, a Liverpool motor engineer and company director, had developed an ambition to fly. He constructed a bi-plane, based on the design of the American Glen Curtiss, at a cost of £625, and transported it by motor along the deserted lanes from Liverpool. He assembled it on the shore in an hour. Twenty minutes later, with six gallons of petrol aboard to power its 30 horse-power engine, he flew at an altitude of 30 feet for 2 - 3 hours. Patterson was the first aviator to succeed at his first attempt in an untried machine.

He was soon experimenting further,

©Formby Civic Society



flying every day having marked out part of the shore (*then privately owned*), as an airstrip and even giving lessons. He received his pilots certificate in December of that year. Paterson emigrated to South Africa where he is still well remembered as the 'founder' of the South African Air Force.

Another early aviator was Gerald Higginbotham from Macclesfield who bought a used Bleriot in a Manchester car saleroom. He also built himself a hangar on the shore at Freshfield, assembled his plane with instructions on two sheets of paper sent to him by Bleriot and later the same morning was in the air. He was soon flying over the surprised captains of Atlantic liners in the Mersey.

## Freshfield Flying Centenary Celebration

by Reg Yorke Formby Civic Society

By the end of 1910 there were five aircraft at Freshfield, the two original fliers being joined by bi-plane pilots W D Thomson, a patent agent, who became chairman of Liverpool Aeronautical Society and had one of Handley-Page's very first machines. (*It is said to have been the first by that famous firm to actually fly!*); Also R A King, Patterson's pupil from Neston, who with Patterson at the controls, became the first passenger ever to be ferried across the Mersey by air!

Later came Henry Melly, who flew a Bleriot, with a 25hp engine, a copy of the plane which had crossed the Channel. He spent about six months at Freshfield and early in 1911 moved to Waterloo

which was his base as an instructor until flying stopped when war broke out in 1914. Civilian flying was then forbidden.

The best known of the Freshfield flyers was Claude Grahame-White, a trained engineer and motor dealer, who gained his certificate from the French Aero Club in 1909 and was one of the two competitors in the London to Manchester Air Race in April 1910 and the first ever pilot to take off in the dark. He became the country's first aviation hero.

On August Bank Holiday, Grahame-White flew from Blackpool to Southport. Paterson then flew from Freshfield at 35 mph. and at an altitude of 100 feet, to meet him and landed within sight of

©Formby Civic Society



Grahame-White's plane, only to find such a crowd that a meeting was impossible.

With the backing of family and friends he then formed the Grahame-White Aviation Company at Hendon. He wrote a book about flying and certainly impressed HG Wells who was given his first flight by Grahame-White in 1912.

These and other successful flying exploits at Freshfield were commemorated by a photographic display by the Formby Civic Society at Formby Library during May, a ceremony at RAF Woodvale followed by a fly-past by a number of vintage aircraft over Formby Point, Freshfield which took place on Friday 14th May, (*the date*

of the first successful flight); also this summer visitors to the National Trust at Formby will be able to pick up information about those early aviators and our ever changing coastline. The site of the five hangars was behind the dunes at the seaward end of Victoria Road, Freshfield, now owned by the National Trust. A commemorative interpretive panel will shortly be placed there. The pilot hangar's would have been a quarter of a mile out on the sands.

There will be a further commemoration at the Southport Air Show in September 2010.

**Acknowledgement to Chris Aspin's book 'Dizzy Heights, The Story of Lancashire's First Flying Men' published by Helmshore Local History Society, 1988.**

Luscombe Silvaire 1946 owned by Thomas Carter and Linda Jump, Liverpool ©Reg Yorke



Piper Cub 1938-1947 ©Reg Yorke



Harvard FX-301 Built in 1943 ©Reg Yorke



D H Chipmunk ©Reg Yorke



Jodel Driosom 1 Excellence (Replica) Homebuilt ©Reg Yorke



Europe. Dave is a keen wood turner, or 'bodger', so don't be surprised if you spot him lurking in the woods foraging for a nice bit of maple to carve!

The National Nature Reserve also has a new Reserve Manager, but a much more familiar face to many of you – Pete Gahan

has moved across from Sefton Coast and Countryside Service where he was responsible for managing Ainsdale and Birkdale Sandhills LNR. Pete brings a wealth of experience of dune management with him, and has settled in 'next door' very quickly with the familiar job of monitoring our natterjack toads.

Finally, Eva Tregidgo has been appointed to a new post as Community



Eva Tregidgo, Community Outreach Advisor ©NNR

Outreach Adviser. Eva will be developing an events and education programme for the NNR, as part of Natural England's 'One Million Children Outdoors' campaign. Look out for our great family and children's events throughout the school holidays, all free to attend. You can find details in the Events Guide to Sefton's Natural Coast, or online at [www.naturalengland.org.uk/nnr](http://www.naturalengland.org.uk/nnr) and follow the events link.

We also say goodbye to Alice Kimpton, who has left the NNR to take up a new post working on the National Coastal

Access Scheme. Alice has dedicated over 10 years of hard work, passion and expertise to the National Nature Reserve and the Sefton Coast Partnership, and will be missed by all who have worked with her over that time. Good luck and best wishes for the future Alice!

## Take a ride or a well earned rest at Ainsdale Sand Dunes NNR

Mike Downey

NW NNR's Project Advisory

Natural England has been working for a number of years to improve the visitor facilities on its National Nature Reserves. As one of the top 'destination' NNRs in the country, Ainsdale Sand Dunes is enjoyed by around 100,000 visitors each year.



Picnic area May 2010 ©NNR

Over the past 2 years we have been working to improve access for different visitor groups. The main Woodland Path, a surfaced route running the whole length of the Reserve between Freshfield and Ainsdale, has

been dedicated as a regional Sustrans route for cyclists – so there's no need to apply for a cycling permit any longer. Cycle racks can be found on Fisherman's Path, and at the junction of Woodland Path and Pinfold Path, where cyclists can disembark to explore the sandier paths on foot. The route links to the Trans Pennine Trail, and is a valuable addition to the family friendly traffic-free cycling network on the Sefton Coast.

In 2008 the NNR was also assessed for its accessibility for less able visitors. Direct Enquiries, the Nationwide Access Register, conducted an audit of the main access routes on the NNR and provided advice for improving accessibility for disabled people, as well as for parents with pushchairs. Ainsdale Sand Dunes was amongst the first nature reserves in the country to be fully audited in this way, and detailed accessibility information can now be found at [www.directenquiries.com](http://www.directenquiries.com)

As a result, the NNR team have removed some of the barriers to access, and have now provided facilities such as a wheelchair accessible picnic area along Woodland Path. Although the NNR does

not have public car parking, a dedicated disabled parking space has also been provided in the staff car park, for use by blue badge holders.

**If you would like further information about accessibility on the NNR, or to find out about disabled parking availability, please call the NNR Office on 01704 578774.**



Family picnic May 2010 ©NNR



Good news for Red Squirrels

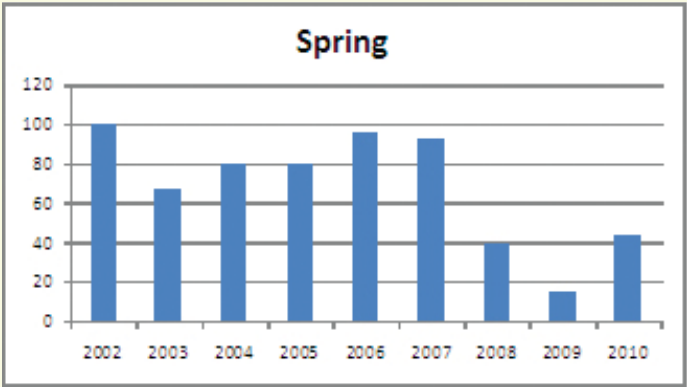
Fiona Whitfield,  
The Wildlife Trust for Lancashire, Manchester and North Merseyside

When you are used to seeing Red Squirrels on a regular basis like we as residents and visitors of the Sefton Coast are, it is easy to forget they are a rare and declining species in the UK.

In the last couple of years we have witnessed, first hand, the decline of this species to alarmingly low numbers due to outbreaks of the devastating disease Squirrel Pox Virus. It was easy to jump to glum conclusions with the population crashing to an all time low with a loss of over 80% of animals in 2009 and conclude that we may have seen an extinction in the coastal woodlands.

However the story has changed path and we are witnessing a recovery in the Red Squirrel population. Monitoring is carried out each Spring and Autumn by dedicated volunteers and it is because of this monitoring that we can give sound results rather than anecdotal evidence that confirms an increase in the Red Squirrel population since autumn 2009.

The figure below shows changes in the indices of spring Red Squirrel numbers within the refuge area since 2002. The overall population size appears to have recovered to the level of 2008, when the Squirrel pox epidemic was beginning to take hold, and has more than doubled since 2009.



If recovery continues at this rate then the population could return to its 2002 baseline in just five years.

We still need to remain vigilant and work together to conserve the Red Squirrel, it is because of the communities involvement in Red Squirrel Conservation that we still have them in this area.

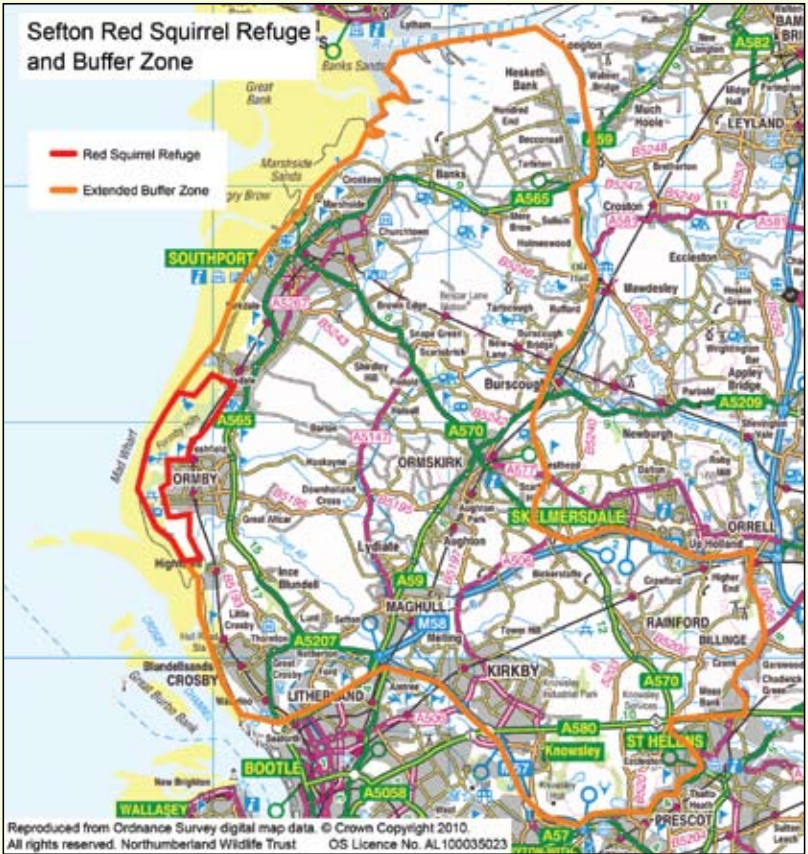
The good news for Red Squirrels in this area keeps on coming in the form of the Merseyside Red Squirrel Project, a three year project steered by Lancashire Wildlife Trust, The Red Squirrel



Robert (Bob) Wright, who died earlier this year, will always be associated with Little Crosby. Bob's own family roots were deeply embedded in the village itself. His knowledge of the area's history – particularly the church, the Blundell estate and local agriculture – was extensive. In addition he was the founder of Little Crosby Museum – a veritable treasure-trove of artefacts.

Survival Trust, National Trust and Save Our Squirrels. The project aims to promote the recovery of the current Merseyside and West Lancashire Red Squirrel population and increase the size of the grey squirrel control zone to cover a wider area.

A map of the extended buffer zone



This project has allowed for the employment of a full time Red Squirrel Officer.

And as if that wasn't enough good news, The Red Squirrels Survivors Project began in October 2009, a four year PhD being carried out by Tim Dale, a full time PhD student at Liverpool University. The first six months of the project have kept Tim busy collecting samples to look at whether any of the surviving Red Squirrels in our woodlands and gardens have immunity to Squirrel Pox Virus.

If you wish for any further information, would like to get involved or would like to report a Squirrel sighting please contact Fwhitfield@lancswt.org.uk

Bob tirelessly 'waved the flag' for Little Crosby, determined to ensure that the history and archaeology of this small community should not be overlooked. He was a regular participant in heritage activities, including Sefton Coast Partnership events such as the annual Forum. He would load a selection of items from the museum into his van, then set out his display stall and talk entertainingly to all-comers.

It is thanks to Bob that the memory of Snigerry Camp – a transit point for troops in the First World War – was kept alive. This feature of local military history has now been embedded in the Landscape Partnership project funded by the Heritage Lottery Fund. Further research into the camp will be a fitting memorial to Bob Wright, passionate supporter of Little Crosby.

©Graham Lymbery



Adaptation to Coastal Change

Graham Lymbery Project Leader Coastal Defence - Sefton Council



This section (pages 7-18) has been funded by the IMCORE Project

Adaptation to coastal change is something that has rapidly risen up the government's agenda in recent times with policy documents being developed at both a European and National level in 2009. Is it something new? No. Coastal change is something that anyone who has spent time on the coast will recognise, whether it be land reclamation, changes in how we use the coast or erosion. Where there is a changing coast we adapt to that change whether to exploit it or deal with a threat.

So if we are all aware of coastal change why has adapting to it suddenly come so high up on government agendas? I would suggest that this relates to climate change and to our evolving approaches to managing the coast. Climate change first; unless you have been living in a cave (in which case you have a very low carbon footprint - well done) you will be aware of climate change and you will be aware of calls to change our lifestyles to reduce the emission of greenhouse gases; normally referred to as mitigation. However mitigation is only one side of the coin, because of the delay between emissions and changes in climate, whatever we do to reduce greenhouse gas emissions now, will not alter the changes to climate that we are expecting over the next 40 years; because of this we need to adapt to those changes in the climate.

With regard to the way we manage the coast a notable change over the last 20 years is that we have started to take a long term perspective when developing policies; up to a hundred years. Given this we need to consider how the coast will change in the future both as a result of natural processes and climate change. It is this cumulative change that we are referring to when we talk about adapting to coastal change.

So what do we need to do to adapt to coastal change? As ever the process sounds deceptively simple but in practice is complicated. We need to:

- Understand how the coast will change
- Understand the positive and negative impacts of this change
- Consider our options for adapting to these impacts
- Choose the preferred options and secure funding
- Implement the options

To do this we need evidence to support our understanding of coastal change and we need to select preferred options and include them in the management plans we develop. We also need to share our understanding with stakeholders.

Why is this complicated? Because the coast is complicated. Later in this edition Derek Clarke talks about the work he is undertaking to monitor groundwater in the sand dunes to help us understand how climate change might impact upon dune slacks, but this is only one piece of the jigsaw. For dune slacks we also need to understand how they mature over time, how they will be affected by coastal erosion, how they link together as a network, how variations in seasonal rainfall patterns will affect them, what will be the affects of changes in temperature on species reliant on these features and on top of all this what will be an effective way of managing this feature to maintain it in the long term?

So what are we doing about adaptation to coastal change on the Sefton Coast? Firstly it is worth saying that we are fortunate; thanks to decisions taken in the sixties and seventies development at Formby (the main eroding section of our coastline) was limited and as a result we don't have houses at risk of falling into the sea in the next hundred years; some of my counterparts on the East coast do have this problem and my sympathies go out to them and the home owners.

For Sefton we are developing our knowledge and evidence to support our understanding of how the coast has and will change through a number of on the ground projects discussed in more detail later in this edition by Michelle Newton. A key aspect of these projects is that they include communication to stakeholders on these issues.

If you want to know more on different organisations policies to adaptation to coastal change have a look at Alice's article considering how Natural England's policy on this subject relates to the Sefton Coast; look at the National Trust website and their Shifting Shores document, as ever the Trust were ahead of the game publishing their policy on coastal change in 2005. Also worth looking at is DEFRA's website where they have an outline of their emerging policy for adaptation to coastal change and details of the 15 pathfinder authorities who are exploring approaches for adapting to coastal change.



## Sefton's approach to adapting to coastal change

Michelle Newton

Coastal Officer Coastal Defence - Sefton Council

### Coastal Change on the Sefton Coast

Coastal change is change in the physical environment and the way the coastal environment is used by humans, both in response to natural change, societal change and climate change (human induced). **The Sefton Coast is changing; it always has and always will.** Evidence of this change can be found at Formby Point where prehistoric footprints and remains of a caravan park and lifeboat station are exposed on the beach by the action of the sea; to the reclaimed land at both Southport and Crosby which has now been developed into highly desirable leisure and recreational amenities.



Prehistoric footprints ©Sefton Council Archive

### Climate change and the Sefton Coast

There is mounting evidence that our climate is changing caused by a combination of both natural and human induced factors. However, there is growing evidence that human activities are a major cause of our changing climate today. We are currently locked into a period of change over the next 30-40



Children investigating prehistoric footprints ©Sefton Council

years as a result of past emissions of green house gases. These gases remain in our atmosphere for long periods of time and have the ability to influence our climate into the future. In Sefton we are likely to see over the next 50-100 years:

- A rise in maximum summer temperatures by 2-4°C
- The warmest day of the year to rise by 4°C
- Increased occurrence of "mini heat waves"
- Summer rainfall may decrease by on average 11%

- Winter rainfall may increase on average by 20%
- Extreme storms may be more frequent and intense with rainfall events in excess of 150-200mm in one day leading to increased flooding events
- Sea levels may rise by up to 85cm

These potential threats are likely to alter our coast dramatically in both a positive and negative way. As we are aware that these changes will occur in the future it is important that we do something about it now, in the form of adaptation and mitigation to reduce the impacts, enhance the opportunities and reduce the causes of coastal change.

**Adaptation** is an approach to reduce the impacts and encompass opportunities to our changing climate to enable us to protect society and what society values from the forces of nature.



Southport Sea Wall ©Sefton Council

**Mitigation** is about reducing the sources and enhancing the sinks of green house gasses to protect nature from society



Burbo Bank Windfarm ©Sefton Council

### Adaptation projects on the Sefton Coast

There are currently a number of projects underway on the Sefton Coast specifically looking at the issue of coastal change and climate change. These projects are:

#### IMCORE project

IMCORE, which stands for Innovative Management of Europe's changing Coastal Resources, is a European funded project through INTERREG IVB which Sefton Council's Coastal Defence Team is a partner of. This project involves improving our understanding and evidence of coastal change and climate change by:



- Understanding the longer term coastal change
- How habitats on the coast may respond to sea level rise
- How the hydrology of the dunes may change with climate change as discussed by Derek Clarke in this edition
- Working with key stakeholders to develop prioritised adaptation actions by developing an adaptation study
- Communicating this information to stakeholders, including the general public with a primary focus on educating school children as our future stakeholders as shown in the ECOastlines supplement of this edition.



Annie Worsely communicating the importance of our salt marshes ©Sefton Council

### Pathfinder project

The Secretary of State for the Department of Environment, Food and Rural Affairs - DEFRA (Hilary Benn) announced on the 1st of December 2009 the outcome of the coastal change Pathfinder Competition launched in June 2009. Sefton was successful in securing funding and becoming one of 15 local authorities that have been selected as pathfinders to explore new approaches to planning for, and managing adaptation to coastal change together with their communities, using the £11 million coastal change fund available.

Sefton have been allocated £337,000 to undertake work between now and June 2011 to plan for adaptation, undertake adaptation works and community engagement. We will be working with a number of partners to deliver this work, they include the National Trust, Edge Hill University, Liverpool University, North West Coastal Forum and from within the Council the Coastal Defence Team, Coast and Countryside Service and Leisure and Tourism department and the North Sefton City Learning Centre. The work will be coast wide with a particular focus on Formby Point given its rapidly changing nature with rates of erosion up to 4 metres per year. The project will include examining parking issues at the coast, development of a strategy plan for dune slacks and creating dune slacks, construction of boardwalks and access across a mobile dune system, community engagement and specific engagement with schools and parents on the subject of coastal change. All findings of these various studies will be reported back to DEFRA.

Erosion at Formby Point ©Sefton Council



### Lifeboat Road sand dune management project

Sefton's Coastal Defence team have been fortunate to secure funding from the Environment Agency to undertake a sand dune management project at Lifeboat Road, Formby as part of providing evidence of adaptation options for sand dunes. The project seeks to: Quantify the effectiveness of sand dune management techniques for slowing down the rate of erosion and encouraging accretion in order to inform the assessment of adaptation options for the sand dune system. There will be a two year programme of sand dune management works over a 2.6km length of the coast in order to test the effectiveness of the methods.

The methods tested all work with the natural formation of dunes through wind blown sand and will include fencing, thatching and marram grass planting.

**As you can see through available funding and support from Europe and a number of national government bodies and agencies as Graham Lymbery previously stated - adaptation is high on everyone's agendas and here in Sefton we are working hard to put these policies into practise on the ground.**



Example of sand dune management works at Lifeboat Road ©Sefton Council



Coastal Adaptation:  
It's as clear as mud!

Vanessa Holden and Annie Worsley, Edge Hill University.

Soft sediment coasts, such as sand dunes or salt marshes, are very susceptible to changes over a relatively short timescale, particularly due to waves and wind. Because of this, people, animals and plants need to adapt to the changes fairly quickly compared to other types of coastlines, such as hard rocky cliff lines. Such soft sediment coasts however are extremely important in terms of the habitat that they provide to flora and fauna, and in their ability to act as 'soft' sea defences against coastal flooding. In many, but not all, cases the coastline will try and adapt to changes (for example by changing sea levels) by moving the different coastal environments in line with the changing sea levels. For example, salt marshes have distinct environmental 'zones' that only exist at certain heights above sea level, where a fairly consistent number of tides will cover them. The plants and animals that exist in the zones are usually well adapted to the specific features of the zone, and often struggle to survive in other areas. For instance, where there are more or less tidal inundations to which they are adapted – if there are less tides covering them, they will be 'out-competed' by more terrestrial species, if there are more tides covering them they often can't cope with the associated stresses that include waterlogging, wave action and lack of oxygen.

Marshside saltmarsh ©Vanessa Holden



A study of the development of the northern section of the Sefton coast has shown that adaptations to the always changing coastline by people, animals and plants has always been happening. Sometimes the adaptations by people have involved actively managing the environment, at other times it has been to alter how they react with the coast to fit the changes at the time. How people have



Training wall 1921 ©Sefton MBC Archive

adapted has largely depended upon the culture of society at the time, for example during Victorian times the approach was very much to control the environment – they loved building things, they trained estuary channels for shipping, and encouraged salt marsh to claim land from the estuary. Increasingly, humans are now more aware of the benefits of working alongside natural changes and the importance of the natural environment.



Sediment collection at Marshside ©Vanessa Holden

To allow people to successfully adapt to the inevitable changes, and to plan for both the short term and long term future we need to understand as much as possible about the processes that are happening along the coastline. In order to do this, a range of detailed studies to monitor rates of change are ongoing, and build upon a detailed knowledge base of what occurs along the Sefton coastline. For the north Sefton coast specifically, this includes



Monitoring at Marshside ©Vanessa Holden

monitoring of the build-up and erosion of sediments, and examining the characteristics and movement of the sediment, all of which are important to understand, to allow the most educated and appropriate management and adaptation strategies to change to take place.

The challenge now is for people to adapt to the natural changes that will inevitably occur in such a dynamic environment as a coastline, whilst maintaining the already established infrastructure that are important for society, such as roads and buildings, wherever possible. But, we also need to have an awareness of the importance of the natural environment around us, the plants and animals, as they are ultimately critical to the future of the coastline; for certain species are vital to the ability of the natural environment to continue to adapt, for tourism, for natural defences against possible future flooding, and for keeping the coastline as a very special and unique place.

Southport pre Coast Road ©Sefton MBC Archive



Natural England's approach  
to adaptation

Alice Kimpton

Natural England has a clear position around Coastal Change and a full copy of the position statement can be found at [http://www.naturalengland.org.uk/Images/coastal-change\\_tcm6-14791.pdf](http://www.naturalengland.org.uk/Images/coastal-change_tcm6-14791.pdf)

The most relevant points from this document for the Sefton Coast are:-

The first and most important one which we all need to recognise is:

- **Sea level rise and coastal change are inevitable – this creates both opportunities and challenges. Sustainable coastal management needs to embrace change.**

Looking back at maps of the Sefton Coast we can see that villages have come and gone and that Victorian endeavours to create a promenade at Ravenmeols failed as the coast marched seaward leaving the prom high and dry.

As managers on the Sefton Coast we have to find ways to work with natural processes to build a resilient coast. We need to look across ownership boundaries and work together to embrace techniques developed both here and abroad. Dunes need to



©Natural England

have space to be able to move around responding to changes in sea level. Soft coast defences work very differently to a hard sea wall. We would expect that through managing the system and processes that the habitats we know and love would flourish as a result.

As visitors and users of the coast we also need to realise that:

- **As the coast changes so too does the mosaic of habitats and species as well as the landscape and its 'local distinctiveness' will change and evolve. We need to manage these changes to ensure the best outcomes for the natural environment.**

It is easy not to notice the tiny changes which go on every day and just see the dramatic changes which appear due to a management event. The Sefton Coast is an amazing place for wildlife particularly the specialised wildlife that lives in the dunes. As managers we need to balance the needs of all the different plants and animals which live here. We are always looking for the most sustainable way of

managing the area trying to create a system which will sustain itself. Grazing is one of those tools we use.

As long standing managers on the Sefton Coast Natural England understands that:

- **Local communities have a keen interest in the way the coast is managed and generally wish to participate in decisions on future management options. They expect decisions to be made on the basis of sound science and inclusive consultation and dialogue.**

It is really important that users of the coast have an understanding of how natural coasts and ecosystems work. This enables them to fully participate in discussions around management. Natural England along with the Sefton Coast Partnership will be entering in to community engagement activities over the coming year and if you want to get involved look out for the opportunities advertised in local press.



©Natural England

The Effects of Climate  
Change on Sefton's  
Dune Slacks  
Derek Clarke  
Southampton University

The dune system of the Sefton Coastline supports an exceptionally rich bio-habitat –the dune slack. This is due in part to the presence of a shallow water table beneath the dunes. Dune slacks on the Sefton Coast are extremely important as we have 40% of slacks found in England. A number of rare animal and plant species are found in our dune slacks such as the Natterjack Toad and petalwort. With the threat of climate change the future of this important habitat is at risk in some areas of the coast due to changes that could occur to the vital water table along the coast.



©J.Mills photography  
Flooded dune slacks in 2001

Along the Sefton coastline the water table rises from mean sea level to a maximum +10.5m approximately 2km inland. When the water table is close to the dune slack floors, rich assemblages of flora exist and in wet winters, these slacks often flood to a depth of 10-30cm providing breeding grounds for amphibians such as the Natterjack Toad.

A well tube monitoring network was installed in part of the dune system at Ainsdale Sand Dunes National Nature Reserve in 1972 and water table levels have been measured every month. Long term monitoring of the wells over the last 35 years has provided a comprehensive data set to understand the influences of seasonality, changes in climate, coastal erosion and

land use management changes on groundwater levels in this area.

Investigations based on the measurements made at Ainsdale Nature Reserve found that if all other variables such as land use, drainage and sea level remain the same over the rest of the century, the average groundwater levels may decline by up to 1.5m. The study examined the frequency of flooding of dune slacks 1km inland at Ainsdale. In an average year these slacks are usually flooded for 6 weeks, but by the end of the century they will rarely flood. In the future there may be some years with "normal" wet slack conditions, but these events are likely to be interspersed by sequences of 5-10 years of no flooding. This will result in a drastic reduction in the percentage of wet slacks and will cause a gradual transition from humid slacks to dry slacks.

Sea level rise and coastal erosion

will affect the water table but the changes will probably be an order of magnitude less than the climatic impact. However the dune systems are dynamic and they can change character and location rapidly. At Sefton, for example, coastal erosion south of Ainsdale is removing dune habitats at up to 4m/year. The eroded sand material is being transported north and is widening the beach at Southport, where 60ha of new embryonic dunes have developed between 1989 and 2005. Mechanisms such as these may offer alternate sites for humid slacks to develop, reinforcing the fact that dune systems can change their character in a few years and that planning and management strategies may have to be flexible in the future to account for this dynamism.

©Paul Wisse. Dune slack Ainsdale



©Robert Wolstenholme. Female Natterjack Toad emerging from a dune slack pool



Coastal change and changing climate – the National Trust’s approach

Andrew Brockbank – National Trust

“Our approach is one of continual wide-scale adaptation whether that involves taking measures to minimise the impact of heavier rainfall or flooding on historic buildings or planning long term to live with and mitigate effects of sea level rise and erosion along the coast....”

Dame Fiona Reynolds, Director General, National Trust, 2010



Climate change linked to greenhouse gas emissions adds another dimension to natural change processes which already have profound impacts especially at the coast. Popular understanding of what climate change may mean for us in the decades and century ahead, ranges from the pleasant prospect of hotter drier summers to fearful images of flood and tempest wreaking havoc on our homes and livelihoods. In a coastal context, gradual sea level rise may lead to measurable increases in the rates of erosion although greater uncertainty surrounds the possible impacts of more frequent and intense storms and tidal surges.

From a National Trust perspective, coastal adaptation planning is a practical, long term approach to deal with complex coastal change issues including climate change impacts. At Formby, the complexity arises because of the vulnerability of the shoreline and dunes to storms, the rate of erosion and the interplay with recreational activities.

The Shoreline Management Plan (SMP2) for North West England and North Wales provides context for adaptation planning through the preferred long term policy of natural evolution of the dune coast. The policy guidance in the short, medium and long term is ‘managed realignment’ which allows for the dune system to roll back while managing sections of the dunes under pressure from recreation, and managing adaptation in the coastal risk zone. The high amenity value of the dune system is recognised, alongside the need to relocate car parks, footpaths and facilities in order to maintain the social benefits of access and enjoyment in the long term.

In 2009 a detailed National Trust Coastal Risk Assessment identified the social, cultural and environmental features at risk with estimated timescales over which changes may occur. This drew upon local monitoring data used in the preparation of Sefton Council’s 2007 Report on coastal erosion predictions for Formby Point. The shape of the future coastline is considered against prevailing patterns of change and with

the addition of changes which could result from sea level rise linked to climate change. Poorly located infrastructure like the main National Trust car park, as well as coastal habitats and inter-tidal archaeology are all vulnerable in the short to medium term.

Identifying the challenges is important but achieving effective solutions will require understanding and support from many parts of the community. At a Sefton Coast level, the National Trust is working with key partners to develop a Coastal Adaptation Study, recognising that a joined up approach will be essential to sustain the benefits of access, enjoyment and a high quality natural environment.

At a more local level, National Trust is engaging with both local people and visitors to identify areas where we can work together to achieve shared solutions to issues. Coastal change presents huge challenges but there are so many opportunities to work together to make things better. Find information about how you can get involved by visiting the Formby pages at [www.nationaltrust.org.uk](http://www.nationaltrust.org.uk)

Living Landmarks?

Andrew Brockbank – National Trust

In May 2010 the Centenary of a pioneering flight from Freshfield beach by Cecil Compton Paterson, reminds us that we share a privilege as we enjoy flight to all parts of the globe today. We also enjoy birds-eye views of landscape and coast unimaginable until a few decades ago; and we can view aerial photographs taken from the mid 1940’s onwards. However, it is remarkable that Formby Civic Society holds a few aerial photographs of Formby beach taken back in 1911 by one of those magnificent men in their flying machines. The pioneering aviators’ sheds or hangars appear as contemporary landmarks close to the shoreline which was a full ¼ mile to the west of the present shore!

100 years ago, Formby Point was much more prominent, shaped by natural accretion of sand, which had been helped by the labours of tenants and estate workers who built brush wood fences and planted Marram grass during the late 1800’s. But erosion, triggered by changes offshore in the early 1900’s, has led to the coast receding by ¼ mile in 100 years!

Aerial photographs are most useful in tracking landmarks and landscape change. The excellent coverage of 1945 reveals extensive asparagus fields at Victoria Road, set within the dunes with well established woodland and shelterbelts around the fields. The Victoria Road navigation marker can be

seen in this and later aerials from the late 1950’s and early 1960’s. Pinetrees Café stood as a prominent landmark until it’s destruction in a November storm surge in 1961 and the Pinetrees Caravan Park was relocated in 1981 to a less vulnerable position, a former asparagus field, discreetly set within pine woodland to the north of Victoria Road. Distinctive too was Gypsy Wood which was undermined by erosion of the dunes.

So what coastal landmarks could we see from the air today? The vulnerable dune car park at Victoria Road? The mobile dunes, with stabilising layers of brush wood fencing to slow down their advance across the land? The last remnants of Formby’s Lifeboat Station on the shoreline at Lifeboat Road; or maybe the wind turbines on the Burbo Bank set within the arc of the Mersey navigation channel?

As historic landmarks gradually disappear from our coastline what will the landmarks of the future look like? We have less need for buildings and structures near the dune coast and those which we may build, will be located at a safe distance from the changing coast. Future landmarks will be the living, evolving features in the coastal landscape, and the challenge for us could be to form a picture of what the aerial photographs of 50 and 100 years in the future may look like!

Burbo wind turbines ©National Trust



Aerial oblique photograph showing Pinetree Café, navigation marker and caravan park



Gypsy Wood undermined by erosion ©National Trust



Extract from 1945 aerial photo ©Sefton MBC



1911 image of shore and sheds at Victoria Road courtesy of Formby Civic Society

Formby Lifeboat Station foundations ©National Trust



Restoring the Ribble saltmarshes: managed realignment at Hesketh Out Marsh

Tony Baker Ribble Sites Manager RSPB

Many of the UK's most important habitats are threatened by the changes in our climate, but saltmarshes are probably the most obvious victims to date. Britain's saltmarshes are of outstanding importance to world bird populations. Our geographical location makes us a relatively short-haul flight for the millions of birds that migrate to Arctic areas to nest every year. Many of them spend time on Britain's estuaries on their journeys north and south or stay the whole winter on our wet, warm and fertile coasts.

The loss of saltmarshes has been one of the most tangible effects of sea level rise due to climate change; around 600 ha of saltmarsh was lost in the UK between 1992 and 1998 and current losses are estimated at 100 hectares per annum (UK Biodiversity Action

Plan). Most of these recent losses have been along our south and east coasts, but we have also 'reclaimed' saltmarshes all around our coasts for a variety of uses over the years. Only now are we beginning to appreciate the enormous environmental value of saltmarshes, not just to wildlife but to our own interests and survival.

At Hesketh Out Marsh, a private landowner embanked the entire 350 hectares of saltmarsh in 1980. This was the last such reclamation to take place on the Ribble estuary and made it an obvious choice when the RSPB began to look for opportunities to restore some of the intertidal habitat that continues to be lost around our coasts. We were finally able to purchase the western half, (180 hectares), in 2006 and to begin work in Spring 2007.

The opportunity arose when the RSPB and the Environment Agency realised that they shared objectives for the area. The Agency were aiming to upgrade the sea defences at the time and are also the official 'champions' for the UK Biodiversity Action

Plan for saltmarsh. It was agreed that if the RSPB were to buy the land, the Agency could purchase the soil that it needed to complete the upgrading of the sea defences from the RSPB. This additional money made the purchase of the land possible and meant that the Agency were able to avoid the costly and environmentally damaging process of bringing the soil in by lorry.

Over the last 3 years, the site has been transformed into a fully functioning saltmarsh again after 30 years in arable production. More than 15km of creek have been excavated and four 100m wide breaches have been made in the outer flood wall, each connecting a newly excavated creek on the inside of the site with a major creek on the outside of the site. 11 saline lagoons, up to 1.5 metres deep and 1 hectare in size were also dug, providing additional habitat for birds like the avocet and redshank. Saline lagoons are themselves a very rare habitat in the UK and provide nursery and foraging areas for fish and invertebrate species. They also offer great birdwatching opportunities from the bordering public footpath.

The great range of coastal wildlife will benefit but the most obvious of these will be the birds, including lapwings, golden plovers, wigeon, teal and pink-footed geese in the winter as well as breeding birds like redshanks and avocets.

But the human benefits are also very significant. The Environment Agency have upgraded 2km of flood defence bank, raising the height by over 1 metre and the width by 7 metres. 300,000 cu metres of material have been moved in the process. Having the material available on-site has saved the taxpayer an estimated £2 million and perhaps more importantly, has meant that an estimated 75,000 lorry journeys have not had to be made along narrow country lanes and through local villages.

With a predicted sea level rise of 225mm over the next 50 years, the new flood banks should be sufficient protection for many years to come.



©RSPB. Lapwing



©RSPB. Brown Hare



©RSPB. Redshank

The greatly improved sea defence is the most obvious improvement, but the reinstatement of the kilometre-wide belt of saltmarsh means that the sea wall is now fronted by a massive natural 'sponge,' soaking up the energy of the storm tides before they reach the sea wall itself.

And for the visitors, whether they are locals or tourists, the Ribble Coast & Wetlands Regional Park has been able to add a new 'attraction' to its list. Whilst the facilities at Hesketh Out Marsh are modest, (a car park and a viewing platform), the new reserve is a very welcome addition to the short list of places where the keen naturalist or walker can reach the shores of the Ribble estuary in safety.



©RSPB. Hesketh Out Marsh West in 2008 during restoration

Managed realignment – what's in a name?

'Managed realignment' is the ugly and uninspiring name for what is a beautiful and exciting process. Where a sea defence is no longer considered viable or desirable, the option can be taken to abandon the existing, compromised, line of defence and create a new line of defence some distance inland that is less demanding in maintenance terms and less vulnerable to tides or weather.

This gives space back to an expanding water area, allowing it to generate new and dynamic habitats for a variety of wildlife.

Managed realignment is an excellent example of how the creation of new wildlife habitats can help to reduce the threats posed to human society by climate change. In this case, ecosystem-based adaptation is provided by the new saltmarsh. It gives space back to the estuary, allowing it to spread out wards as sea levels rise and provides a buffer against the impact of the rising sea levels on our coastal defences. It is also a good example of how adaptation to protect human interests can be enormously beneficial to the adaptation of wildlife to climate change.



©RSPB. Hesketh Out Marsh West in 2002 before restoration



## Alien Invaders

Sally Edmondson

Liverpool Hope  
University

**The threat of alien species invasions to the dunes.** We are currently experiencing the world's 6th major extinction event, first identified by internationally renowned conservation biologist Norman Myers in 1979. Alongside giant asteroid impacts, and continental-scale flood basalt events effecting global photosynthesis, acid rain and sustained climate change, human actions can sadly now claim to be the cause of such an event. The last major extinction event was 65 million years ago when more than half the species on the planet, including the dinosaurs, went extinct. The introduction and invasion of alien species into areas outside their native ranges ranks among habitat destruction and pollution as one of the major causes for the current extinction event.

Alien species are now a feature of plant and animal communities world-wide. In the UK we have suffered significant losses. Well-known examples are the demise of Water Vole and Red Squirrel populations because of competition with the introduced Mink and the Grey Squirrel respectively. In the plant world an example is the highly competitive, and almost impossible to eradicate, Japanese Knotweed.

The alien plants that have caused by far the most serious negative impact on our dune biodiversity are the deliberately introduced woody species such as Pines, Poplars and Sea Buckthorn. These species not only completely replace the native sand dune plant and animal communities in the footprint of their established areas, but also invade adjacent dunes. More than that, their cover stops the dynamics of sand dune movement, the very process that provides both the specialist environments needed for dune plants & animals, and also the mechanism that will allow the dune system to adjust to changing conditions such as climate change. In addition, their increased evapotranspiration rates use water from the dune aquifer more rapidly than dune vegetation. This depresses the dune water table which is the base level for geomorphological activity and is fundamental to providing the seasonally wet dune slacks, home to floristically-rich

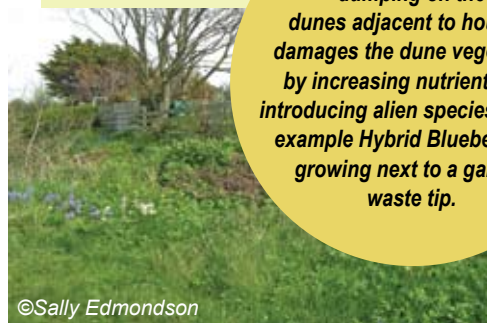
*The pine woodlands eliminate the original dune plant and animal communities, 'folssilise' the dune topography thus stopping dune dynamics, and lower the water table of the adjacent open dunes*

vegetation and breeding areas for Natterjack Toads. Based on research lead by Dr Derek Clarke at the University of Southampton, water table levels are predicted to fall by over one metre in the next 70 years, making this hydrological impact of tree cover even more severe. In summary, these large woody plants are responsible for very significant losses of dune biodiversity.

The second most significant source of alien plant introductions onto the Sefton Coast dune system is gardens. Very few plants actually spread themselves onto adjacent dunes. The introductions largely result from deliberate dumping of garden waste onto dune areas. The result is a zone of modified vegetation all along the housing boundary with enhanced nutrient status resulting from the dumping of organic material, and with very high frequencies of established alien plants. The top five most commonly occurring plants along the housing boundary on the dunes in Sefton are Snow-in-Summer, Russian Vine, Montbretia and Red Hot Poker. Spanish and Hybrid Bluebells are also extremely common and may have missed being in this top five because of surveys being undertaken in summer after they have died down.

I have recently conducted a survey of dune managers throughout England, Scotland and Wales that demonstrates this phenomenon to be occurring almost everywhere that housing is adjacent to dunes. The commonly occurring aliens are also very similar to those recorded in Sefton, with freely seeding species such as the non-

*Garden waste dumping on the dunes adjacent to housing damages the dune vegetation by increasing nutrients and introducing alien species. In this example Hybrid Bluebells are growing next to a garden waste tip.*



©Sally Edmondson

native Bluebells and Snow-in-Summer being the most commonly occurring, and large perennial, vegetatively spreading plants such as Montbretia also being very frequent.

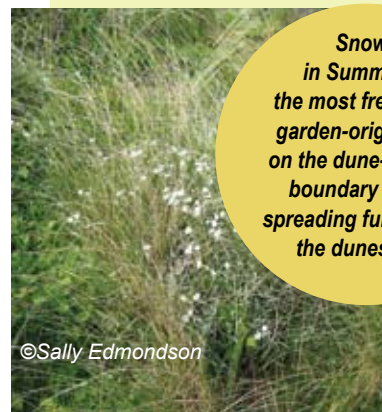
Any introduction of alien plants takes the resources of the native species it replaces and alters the

ecology. Large competitive plants can totally exclude all the native species. Research shows that the chances of established aliens becoming invasive are low, but increased numbers of alien species enhances that chance. It is also known that longer residence time (how long a species has been present) increases the probability of it becoming invasive. An example of an introduced species suddenly becoming invasive is the Rum Cherry that was present on the Amsterdam Waterworks Dunes for years. It suddenly underwent a population explosion invading the open dunes. A huge amount of money has been spent on clearing the species, but the site managers consider that they will probably never totally get rid of it.

Nearly all the garden-origin alien plant species reported in the dune manager survey are from lower latitudes than the UK, the centroids of their distributions ranging from 48° to 30° degrees north or south of the equator (Great Britain lies approximately between 49° and 58° north). They are therefore stealing a march on native species in terms of potential response to climate change. Changing conditions caused by climate change is just the sort of trigger that might spark an invasion by some of the many alien species already established on the dunes. Yucca and Pampas Grass, both species of lower latitudes, are already very invasive on dunes in southern Europe. The survey showed them to be established on a number of dune sites in southern England, with Pampas Grass spreading rapidly in some places.

Biodiversity loss is not something that only happens in the world's biodiversity hotspots such as the Amazon rainforest. In the UK we have already suffered significant losses resulting from alien species invasions, including on our dune systems. We need to recognise that severity of this threat, seek to mitigate damage already done, and ensure that our actions minimise future introductions and invasions.

*Snow-in Summer is the most frequently garden-origin alien on the dune-housing boundary and is spreading further into the dunescape*



©Sally Edmondson

## Dragonflies and climate change

Philip H. Smith

**B**eing brightly-coloured and easy to identify, dragonflies and damselflies have always been a popular group with naturalists, so we know a good deal about their distribution and how this has changed over time. Up to 1991, only 14 species had been recorded in the Sefton Coast sand-dune system, ten of them breeding here. Today, the total number recorded is 20, of which 14 are probably breeding. This represents a 43% increase in dragonfly diversity in only 20 years.

The extra species fall mainly into two groups:

- **Those with mainly southern British distributions that have moved north;**
- **Long-distance migrants from continental Europe, these appearing during summer heat-waves.**

Of the first group, two dragonflies, the Emperor (*Anax imperator*) and Ruddy Darter (*Sympetrum sanguineum*) had already arrived here by 1990. Our largest species, the Emperor was first seen during the hot summer of 1976 but did not become well-established until the mid-1990s. The Ruddy Darter, our only nationally notable dragonfly, first appeared in 1989 at a time when the nearest breeders were in south Cheshire. Again, by the mid-1990s, this attractive insect had viable breeding populations in several duneland ponds. More recent colonists are the Broad-bodied Chaser (*Libellula depressa*) (established mid-1990s), Migrant Hawker (early 2000s) and Black-tailed Skimmer (*Orthetrum cancellatum*) (mid-2000s).

Three species fall into the migrant group: Yellow-winged Darter (*Sympetrum flaveolum*), Red-veined Darter (*S. fonscolombii*) and Lesser Emperor (*Anax parthenope*). Occasional individuals have appeared here only in warm summers, such as those of 1995, 1999, 2003 and 2006. Most recently, the brief heat-wave of early July 2009 saw an influx of Red-veined Darters, up to eight being seen at Sands Lake, Ainsdale.

Another species, the Banded Demoiselle (*Calopteryx splendens*), fits less easily into the above categories. Although it has greatly increased in north-west England, this seems more to do with improving water-quality in the slow-moving rivers and streams where it breeds, than to increasing temperatures. This distinctive insect now occurs abundantly on Downholland Brook, just inland of Formby, so it is perhaps not surprising that there have been two recent sightings in the dunes.

Following their arrival on the Sefton Coast, most of the dragonflies mentioned above have continued to move north and are now becoming established in Scotland. Many studies, both in this country and in Europe, have linked these trends to climate change. Other species may soon follow, one possibility being the Small Red-eyed Damselfly (*Erythromma viridulum*), which first appeared on the Essex coast in 1999. It now breeds over large parts of south-east England and, by 2006, had reached Derbyshire and Humberside. Recent poor summers have slowed its progress but it should get here eventually.

©Philip H Smith. Banded Demoiselle, Downholland Brook



©Philip H Smith. Broad-bodied Chaser, Range Lane, Formby



©Philip H Smith. Red-veined Darter, Sands Lake, Ainsdale





North West Regional Monitoring

Paul Wisse Senior Coastal Officer, Coastal Defence, Sefton Council

The North West Coast

The North West coast is a very varied and complex area including natural habitats, urban communities, industrial areas and associated infrastructure. These landscapes benefit from protection by the coastline, however, as the coast changes the levels of protection vary across the coast and through time. This change is driven by a number of forces such as waves, tides, storms, river inputs and human intervention. A changing coast is simply a process; it is the way we interact with it and put values to it that defines this change as good or bad.



Topographic beach survey 2010 ©Sefton Council

Coastal protection decisions are made based on the risk of and consequences of flooding and/or erosion. It is essential that these decisions are based on the best possible information and as such appropriate monitoring is important. Both the forcing factors driving coastal change and the actual changes to the coast need to be monitored in order to gain a comprehensive understanding of the processes taking place.

Historic data collection

Historically, a wide variety of coastal data has been collected in the North West, with some dating back to the early 1900's. Unfortunately due to the methods of collection and management much of this historic data has little credible use nowadays and, as such, a new improved system of data collection and management needed to be developed.

North West and North Wales Coastal Group

The North West England and North Wales Coastal Group, a partnership of maritime authorities in the North West, national agencies and other relevant parties,

provides sound evidence to support the delivery of sustainable coastal defence management across the North West. The group's responsibility extends for more than 700km from the Great Orme's Head on the North Welsh coast to the Scottish border in the Solway Estuary. The group developed and established a regional coordinated programme of coastal monitoring that collects appropriate datasets to provide scientific evidence of the changes taking place in the diverse coastal areas of the North West.

Monitoring programme design

The programme is designed around a risk based model, which places monitoring emphasis on areas at a higher risk of flooding or coastal erosion than those at a lower risk. The programme is grant aided by the Environment Agency and this current programme runs for three years (2008-2011). Sefton Council undertake the regional project management and collate the data from all the partners in the North West.

Data collection, analysis and reporting

The programme includes the standardised collection, analysis and reporting of:

- Wave, tide, wind and current data, both modelled and recorded
- Aerial Photography, both oblique and vertical
- LiDAR data
- Topographic and bathymetric surveys
- Satellite imagery
- Coastal habitat extents
- Coastal defence condition and performance reviews

Data is being captured to national survey specifications and is quality controlled and securely stored to ensure its durability. Data is being made available online at the national coastal monitoring data portal at [www.channelcoast.org](http://www.channelcoast.org).

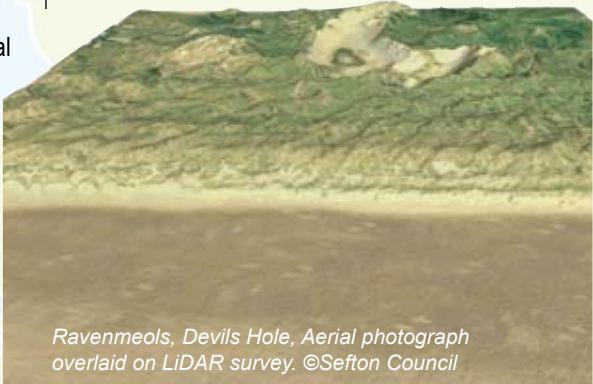
Summary

This programme will ensure that sustainable, coastal defence policy development and management decisions are made using the best possible information. For example it supports the



development of the coastal defence policies in Shoreline Management Plans and it will provide baseline evidence to support new defence design. These decisions will not be restricted by administrative boundaries but rely on the understanding of the coastal processes to determine appropriate areas. The forward planning and coordinated programme will have significant cost saving benefits as only appropriate data is collected, partners can collaborate on data acquisition and duplication of data collection is reduced.

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[www.channelcoast.org](http://www.channelcoast.org)



Ravenmeols, Devils Hole, Aerial photograph overlaid on LiDAR survey. ©Sefton Council

Looking after nature and heritage on the Altcar Rifle Ranges

John Houston

On 30<sup>th</sup> July 2011 the Reserve Forces and Cadets Association will celebrate the 150<sup>th</sup> anniversary of Altcar Rifle Ranges.

The ranges lie to the south of Formby Point and occupy 250 hectares of land between Cabin Hill National Nature Reserve and Hightown. The present day estate includes a large expanse of intertidal foreshore, high dunes, damp grasslands, rough former agricultural land and recent conifer plantations.

In the late eighteenth century measures were taken to control the course of the river Alt. A dune embankment, initiated by sand-trapping, forms the western edge of the ranges. The flat



One of several ponds on site providing habitat for dragonflies. ©Sefton Council

expanse of land that was at one time the foreshore was let for agricultural use in 1855 but in 1860 it was offered to Lieutenant Colonel A. S. Gladstone for use as a rifle range.

The training area is owned by the Reserve Forces and Cadets Association. The site is used by over 10,000 troops every year, using some

2 million rounds of ammunition. In 1985 a conservation advisory group was formed to offer expertise and advice on archaeology and nature conservation. The group is part of a national network of conservation groups supported by the Defence Estates Environment Support Team.

The estate is rich in history and wildlife. Biodiversity Action Plan species include Brown Hare, Red Squirrel and Natterjack Toad along with several rare plants. One of the most spectacular sights on the ranges is the display of orchids in the damp grasslands and dune slacks. In 2009 over 20,000 flowers of the Green-winged Orchid were counted.

Members of the conservation group, all volunteers, offer their time and expertise for the benefit of the area. Long-term monitoring projects include

foreshore bird counts, bird-ringing studies, barn owl studies, red squirrel surveys, orchid counts and natterjack toad surveys.

The ranges include part of the Sefton Coast Site of Special Scientific Interest. A management plan helps to guide work in line with other Sefton Coast plans. Help with essential conservation work has recently been provided by estate staff, the Lancashire Wildlife Trust and the Coast and Countryside Service. In 2009 a programme for mowing dune grasslands was started and in 2010 new pools will be created for Natterjack Toad.

All the site records are held in a site dossier. The group also participates in national MoD events such as bird counts, bat surveys and moth nights. There is increasing interest in the history of the area. Projects have included archaeological investigations as

well as supporting research into military history along the coast.

Guided walks are arranged by the conservation group, ranging from rambles to specific events looking at history, archaeology and wildlife. We especially welcome requests for access by species and habitat experts and from local interest groups wishing to see special parts of the coast. Enquiries can be

addressed to the chairperson John Houston on 01704 870455 or e-mail [jh@psammos.co.uk](mailto:jh@psammos.co.uk)

The group was chaired by Major Doug Farrington for 18 years up to 2008. The current group membership is John Houston (chairperson), Major Bill Hunter (commandant), Major Brian Cobley, Major Doug Farrington, Dr Phil Smith, Dr Jen Lewis, Steve Cross, Ian Wolfenden, Tony Duckels, Fiona Whitefield, Paul Thomas, Christine Bennett and support from the Defence Estates conservation team.



Green-winged Orchid ©Sefton Council



Alt Grange Barn Grade II listed building ©Sefton Council



Group members: L-R Doug Farrington, Paul Thomas, John Houston, Ian Wolfenden, Phil Smith and Jen Lewis ©Sefton Council



Coast and Countryside Service

Fiona Sunners Community Ranger

Over the last twelve months the Coast and Countryside Rangers have put on a huge number of events for the public, from wild flower walks to bike rides and minibeast hunts to pirate trails! I'm sure many of you have been on one or more of these events.

Many of the events are aimed at families, encouraging participation by everyone – sometimes watching it's hard to see who's having the most fun – Dads in particular at the sand castle competition and the den building! With this in mind this year's program continues with a huge variety of events for everybody.



Sand sculptures. ©Sefton Council



Den building. ©Sefton Council

For a full list of events and activities taking place throughout 2010- 2011 please check out the Events Guide on the websites at [www.seftonnaturalcoast.com](http://www.seftonnaturalcoast.com) or [www.sefton.gov.uk](http://www.sefton.gov.uk). The Events guide leaflet can also be obtained from Southport Tourism & Information Centre, libraries throughout Sefton and at the Ainsdale Discovery Centre.

This year though, keep an eye out for our 'PLAYIN NATURALLY' activities throughout Crosby Coastal Park. Our new Play Ranger will be running a series of activities on the beach, in the dunes and at the adventure play ground. This project is funded by The Big Lottery Fund (BLF) Play Programme, encouraging 'natural' play outdoors. The events are all open access, meaning children, young people, families and carers can come and go as they please, rather than having to book a place and stay for the whole session.

Sustainability is one of the topics on everybody's lips and to find out what we are doing take a look at our woodland management! Much of the woodland work we do is for the Red Squirrel – felling and replanting to ensure future food supplies for the Squirrels. But what happens to all the wood we fell? Don't worry it is not wasted and doesn't go to land fill. Much of it is recycled, with the tree trunks being planked and used for bins, signs and picnic tables, whilst smaller stuff is made into bird boxes. Even the thin branches are used to make jewellery! To see all this in action visit us at our Forest Stewardship Council (FSC) Friday event – just to confuse you it's on Saturday! Saturday 25<sup>th</sup> September FSC Woodland Fun.



Necklaces. ©Sefton Council



Bird boxes. ©Sefton Council



Planks of wood from our felled trees. ©Sefton Council

'Forest School' is all about learning in the outdoors – what a fantastic classroom to work in. It is a method of learning introduced from Scandinavia, where it is known as 'skogsbornehaven' or 'naturbornehaven', where 'bornehaven' is the german translation of kindergarten, 'skog' translates as wood or forest and 'natur' is nature.

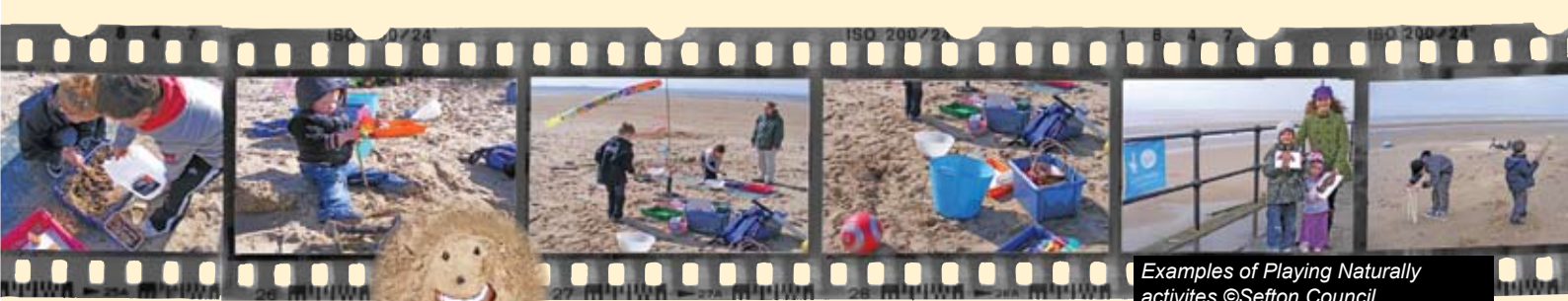
Children are given the opportunity to use the woodland resources to learn a variety of practical activities from using tools to having camp fires as well as learning to appreciate, respect and look after the environment and the wildlife within it. Natural resources often found in the environment can often be used for natural art. The nature of the activities means many children who may not be academically minded have a chance to learn in an environment more conducive to learning. There are many reports around that show how behaviour improves as well as the expected health benefits from being outside, as a result of children taking part in 'Forest School'. As we now have one of the Rangers as a qualified Level 3 Forest School Leader, we are looking at developing a Forest School program of activities for schools – so keep a look out in the near future.

Pathfinder

What is the future for our coastline? What is 'Adaptation & Mitigation'? Do you want to find out more? Can you do your bit for the future?

As part of the 'Pathfinder Project' we will be looking at what you know, how we can improve that knowledge and looking at ways you can be involved in the future.

We have already carried out work on the beach at Formby to monitor sand accumulation and erosion and will be improving access in the near future, but most importantly we will be thinking about the way we communicate with locals and visitors to the coast. Look out for more information, events and activities you can be involved in, in the local press and on our web site [sefton.gov.uk](http://sefton.gov.uk)



Examples of Playing Naturally activities ©Sefton Council

Playing Naturally!

With the development of Crosby Coastal Park and the Adventure Playground – we will be running lots of free fun events and activities!

The project has been carefully chosen by Sefton Play Partnership, to encourage and support children and young people to play outdoors in the natural environment. All the events on this page will be open access, allowing young people, families and carers can come and go as they please throughout the sessions.

The events & activities will be run by our Adventure Play Ranger, providing play

opportunities and resources work with the natural environment. The list of activities is endless, but may include: arts & crafts, den building, scavenger hunts, beach games, beach art, recycling art! Whatever we PLAY it will be FUN – so come and join in.

Summer Holidays 2010  
Playing Naturally – On the Beach  
Every Tuesday  
Mariner's Road, Crosby  
10.00am – 12.00pm and 2.00pm – 3.30pm

Playing Naturally – Adventure Playground  
Every Wednesday & Thursday  
Next to the Adventure Playground, on Crosby Coastal Park  
10.00am – 12.00pm and 2.00pm – 3.00pm

A new name on the Sefton Coast - the RNLI

Gordon White Coast and Countryside Officer  
Sefton Coast and Countryside Service

Sefton Council has been developing a Beach Lifeguard Partnership with the Royal National Lifeboat Institution, (RNLI) since March 2009. The partnership agreement was finalised in February 2010 and the RNLI began to arrange procurement of equipment and to initiate recruitment of beach lifeguards. The partnership will undoubtedly improve beach safety and raise water safety awareness for residents and visitors considerably.

On April 1<sup>st</sup> this year the partnership went live with RNLI Beach Lifeguards patrolling Sefton's beaches at Crosby, Southport and Ainsdale. As the summer holidays approach, Formby (Lifeboat Road) will be added to the list. Sefton Council is the first local

authority in the North West of England to join forces with the RNLI to provide lifeguards on its beaches this summer.

There are over 150 RNLI Beach Lifeguard units around England and Wales, and in 2009, RNLI Beach Lifeguards responded to 13,588 incidents, assisting 15,954 people nationally.

In 2009, the RNLI began providing beach lifeguard services in the north east, at beaches in Tyne & Wear, Lincolnshire and Yorkshire. Now on board in Sefton, the RNLI can share its beach safety and prevention messages with more beachgoers in the north of England.

The RNLI encourages people to choose lifeguarded beaches. But there are still many popular beaches, especially in regions outside the South West of England, which don't have lifeguard patrols.



RNLI Lifeguards ©Sefton Council

The RNLI has established an operational base within the Borough, and this has provided new jobs in the Sefton area. The RNLI will provide a like for like service in the first year, mirroring the service previously provided by Sefton Council.

Well trained and vigilant, Sefton's RNLI Beach Lifeguards are a fit and capable team who are able to respond to help save lives close to the shore. However, the majority of their work is preventative, both at the beaches and including educational work with local schools and community groups.

So, whether it's Southport, Ainsdale, Formby (Lifeboat Road) or Crosby beach you are planning to visit this summer, you can be assured that the RNLI Beach Lifeguards will be on duty to help ensure that your visit is a safe one. Look out for the distinctive RNLI lifeguard units, vehicles and uniform.





Llamas and Lapwings

Tony Baker Ribble Reserves Manager

One of the stars amongst the many nesting birds at Marshside is the lapwing, a long-legged, long-crested wading bird that has made the move from wetland to farmland habitats and thereby endeared itself to generations of country folk. Perhaps because Marshside has also bridged that gap between farmland and wetland, it has always held good numbers of these birds.

RSPB staff and volunteers have been following the fortunes of the Marshside lapwings very closely for the past 15 years and this has involved monitoring the outcomes of a sample of nests each year. Recently there have been some signs that all may not be well. To address these concerns, a couple of new initiatives have been introduced in 2010 by Warden, Graham Clarkson to firstly, establish what the problem might be and secondly, endeavour to do something about.

The latest technology has been used in the shape of cameras trained on some of the nests to reveal who or what may have visited the nest besides the lapwings themselves. Many mammals and birds are known to be partial to the odd lapwing egg and indeed, it's not that long ago that we humans would collect the eggs for our own tables.

Sure enough the cameras



have revealed that foxes are a regular visitor to the nests and suspicions that foxes could be a problem at Marshside are now confirmed.

That is where the llamas come in. 'Guard llamas' have long been used in the USA to protect flocks of grazing animals from the attentions of coyotes. In some areas, coyotes take a number of lambs and studies

have shown that the presence of a llama can reduce these losses considerably. Could it work for lapwings and foxes too? We thought it would be worth a trial and so 2 llamas have joined the usual herd of cattle at Marshside this year. It is too early to say whether the trial will have any effect. We are hoping that the llamas, who have a strong, innate dislike of members of the dog family, will attack and chase away the foxes and that this will, in turn, have the beneficial effect of protecting the lapwing nests from fox predation.



If the llamas fail to save the lapwings we will at least have tried what is a very natural solution to the problem and we will have gained a lot of pleasure from seeing a new grazing animal out on the marshes. The llamas are owned

by Gill Baker and Lee Booth and they have also introduced a range of native breed cattle to the marshes including the shorthorn, Dexter and Highland breeds. If you are the sort of person who likes to know where your meat has come from and what it has been eating, you can now buy your beef fresh from Marshside Marshses at Lee's stall at the Wyevale Garden Centre on Southport Road, Leyland (Fridays and Saturdays only).



1. All photographs ©Mersey Waterfront

Sefton coastline – a success story in regeneration

Sefton's coastline has benefited from seven years of waterfront projects in partnership with the Mersey Waterfront; a programme set up to enhance and transform the city region's 135km coastline as well as reconnecting communities to their waterfront.

The creation of the Mersey Waterfront Regional Park has been an ambitious, world-class vision. Managed by The Mersey Partnership (TMP), the programme has been delivered in two stages; the commencement programme (2003 – 2007) funded around 60 projects of varying scale, while the succession programme (2007-2010) supported a number of flagship projects.

The programme has attracted more than £122 million of public and private money, including over £18 million from the Northwest Development Agency (NWD), with a further £9 million from the European Regional Development Fund (ERDF).

Projects in Sefton have included:

- Another Place, the spectacular sculptures of 100 Iron Men by artist Antony Gormley were bought by Sefton Council, with a contribution of over £500,000 from Mersey Waterfront (1).
- The classic seaside resort of Southport has seen a range of waterfront improvements. The new Southport Pier Tram links the end of the UK's longest overland Pier with the town-centre, while Southport's Marine Way Bridge has been hailed as an outstanding example of innovation and excellence (2).
- A new £7 million Crosby Lakeside Adventure Centre will play a key part in the continued revival of the Crosby Coastal Park and offers a high quality, fully accessible, watersports facility with the long term aim of creating one of the UK's premier watersport destinations. It is also home to conference and teaching facilities, specialist short stay accommodation, fitness facilities and a bistro (3).
- Improving open spaces along the

length of the Sefton coastline has seen improvements in accessibility to the Sefton Coastal Path and Freshfield Dune Heath with paths, fences and promotion of access for all – from disabled users to parents with push chairs and toddlers. Other improvements have ranged from enhancing access to habitats at Formby Point, to increasing local community involvement (4).

These completed projects have revitalised the coastline across Sefton. With exciting attractions, beautiful surroundings and an excellent choice of places to explore, Sefton has become an essential place to visit while experiencing the North West. In particular the Antony Gormley statues have captured peoples' imaginations and encouraged them to discover the Crosby coastline - creating a new destination and putting Crosby beach on the map.



For more information on the Mersey Waterfront programme please contact Cathy Elwin, Mersey Waterfront Project Manager on cathy.elwin@merseyside.org.uk

Find out more about Sefton's archaeology and history this summer

**Sunday 25<sup>th</sup> July, 10.30am - 1.00pm.**  
Arranged by Formby Civic Society - and by kind permission of the Commandant, Altcar Training Camp - a visit led by Reg Yorke to the site of Formby's Lighthouse. Erected in 1719 and demolished in 1941, we will examine the site, discuss why the lighthouse was built - and why it was demolished!  
**Advance booking essential; please ring 01704 872187 for details.**

**Sunday 13<sup>th</sup> June 2010, 2.00 - 4.00pm**  
A guided walk led by Jen Lewis and Jenny Stanistreet of Sefton Coast Partnership's Archaeology and History Task Group to consider the evidence for a WWI transit camp and a WWII prisoner of war camp at Little Crosby. Join us to find out more about these little-known wartime sites.  
**Advance booking essential; please ring Jen Lewis on 0151 480 5474 for details.**

**Sunday 25 July 2010, 2pm - 4.30pm and Wednesday 28 July 2010, 6pm to 8.30pm**  
A guided walk led by Gordon Roberts on behalf of the National Trust to explore the evidence for Prehistoric human and animal footprints preserved in silts on Formby's beach.  
**Advance booking essential; please ring 01704 878591 for details.**



Sefton Coast book wins national award

**Sand and Sea - Sefton's Coastal Heritage: archaeology, history and environment of a landscape in north-west England was published in May 2008 by Sefton Libraries on behalf of the Sefton Coast Partnership's Archaeology and History Task Group.**

This superb fully illustrated book, previously featured in the 'Coastlines' issue for Summer 2008,

brings together updated material originally delivered at a highly successful heritage conference organised by the Task Group. Last year the book was entered by Sefton Library Service for the Alan Ball Local History Award 2008. This is a prestigious national award, administered by the Book Services Trust, which recognises high quality local history publishing by libraries and local authorities. When the awards were announced, Sand and Sea was judged to be one of the three winners for books published in 2008 and judged to be "an excellent archaeological account of the coast from Bootle to Southport". A

handsome, inscribed, commemorative plaque was presented to Sefton Council by the Book Services Trust.

Copies of Sand and Sea are on sale in all Sefton libraries, priced £15. Mail order enquiries can be made to Library Admin: 0151 934 4741 or library.service@leisure.sefton.gov.uk





Enjoy bird watching from one of two comfortable hides overlooking the wet grasslands, or take a stroll along the footpaths to take in the views over the saltmarsh and foreshore.

Take a pleasant stroll down the recently refurbished pier, complete with a new modern pavilion which homes a cafe and interpretation centre for the coast.

One of Sefton's award winning beaches provides a popular location for visitors to take the sea air. On a clear day to the north you can see Blackpool Tower and the mountains of the Lake District.

The QJNT meanders through a small area of dunes. The trails are well laid out and information boards detail species present. The recently restored Velvet Trail runs through the Birkdale Hills Local Nature Reserve.

A pleasant area for accessing Birkdale Local Nature Reserve with a new boardwalk around the lake allowing for easy access. A jetty provides a feeding area for the birds that congregate on the lake.

A quieter beach than Southport, which provides visitors with a view of the start to Sefton's sand dune system. A popular starting point for those who wish to explore the remoter areas of the coast.

Come and visit the centre for an informative displays and interpretation about local facilities, wildlife and history. The LNR is an excellent example of open dune habitat with mobile dunes and wet slacks.



A peaceful nature reserve, which is home to some of the best sand dune wildlife in Britain. The pine woodland also supports a healthy population of red squirrels. Several pathways go through the site; the main hard path is suitable for disabled and cycling. Tel: 01704 578774.

A relaxing walk from Freshfield Station to the beach through a mixture of tranquil woodland and open dunes where a variety of flora and fauna can be seen. The newly reopened Old Fisherman's Path provides for an alternative route to the beach. The main entrance point for a circular walk on the Wildlife Trust's Freshfield Dune Heath Reserve begins at the start of Fisherman's Path.

Famous for the Red Squirrels and the pine woodlands, the reserve also offers access to the beach and has a variety of paths to explore the dunes, woodland and old asparagus fields.

The popular Lifeboat Road area provides access to the beach as well as local dunes and woodland. For those looking for a quieter spot walk through the extensive dune system at Ravenmeols and see the Devils hole blowout.

An unusual area fronted by an informal rubble defence, which was formed from demolition arising from bomb damaged areas in Liverpool. It now provides wonderful meadows full of flowers and insects, and a small coastal dune system. Bird watching can be rewarding along the River Alt.

**Ideal area for walkers of all abilities either along the promenade or into the Hightown Dunes and Meadows. Those not so energetic can relax on the beach or recreational grasslands.**

A popular area for sun bathing and recreation with views over the Mersey Estuary to the Wirral and North Welsh Coast. Dunes are rapidly accreting along this stretch of coast.

- **Always check tide times if visiting the beach. Look out for advice on notice boards and warning flags especially if planning to swim. If in doubt speak to a lifeguard or the beach patrol.**

- Dispose of litter correctly either putting it in the bin or taking it home.
- Clean up after your dog.
- Keep to paths.
- Don't forget the suntan lotion.

- Do not disturb the wildlife.
- Do not pick wild flowers leave them for others to enjoy.
- Keep dogs under control at all times.



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Please complete and return to Sefton MBC

☐ **I would prefer to receive my copy of Coastlines via email**  
Please send your name and email address to [info@seftoncoast.org.uk](mailto:info@seftoncoast.org.uk)

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Coastlines is available throughout Sefton Libraries and can be downloaded from the website at [www.seftoncoast.org.uk](http://www.seftoncoast.org.uk)

**NB: ANY INFORMATION SUPPLIED WILL BE PROGRAMMED INTO A COMPUTER IN ACCORDANCE WITH THE 1998 COMPUTER DATA PROTECTION ACT**

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Sefton Council  
Planning & Economic  
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Department  
Magdalen House  
30 Trinity Road  
Bootle  
L20 3NJ



# Ecoastlines

Issue 1

Summer 2010

Welcome to the first education supplement of the Coastlines Magazine. Produced working closely with schools, we hope to both stimulate young and older minds alike and promote active engagement into the protection of our coastline. We hope you enjoy it.

*"Children are the living messages we send to a time we will not see."* John W. Whitehead

For more information contact [darren.lloyd@technical.sefton.gov.uk](mailto:darren.lloyd@technical.sefton.gov.uk)

## INTRODUCING PRISCILLA AND RALPH



An exciting new resource will be launched this September in all Sefton primary schools.

Education staff at the Southport Eco Centre have been working with members of the Coastal Defence team to develop the resource supported by a custom designed flash animation, targeted at Key Stage 2 pupils to enable a better understanding of the changing face of Sefton's coastline.

The resources and animation cover the following areas: Coastal Processes; Climate Change; Sea level rise and increased storminess; Warmer, wetter winters and hotter, drier summers; Mitigation & Adaptation.

The animation depicts a broadcast of the 'Coastwatch' TV show and is hosted by characters created exclusively for the resource, Priscilla the penguin and Ralph the polar bear, with support coming from the existing Eco Centre mascot, Sydney the eco friendly skating red squirrel.

All Sefton schools will receive a pack containing a DVD of ideas, teachers notes and resources linked to the new creative curriculum. The project has also been supported by funded visits to the Sefton Coast to experience the issues first-hand, delivered by the Coast and Countyside Ranger Service and teachers at the Southport Eco Centre.

Graham Lymbery, Sefton's Coastal Defence project leader, commissioned the work through funding available from an Interreg European project called IMCORE (Innovative Management of Europe's changing COastal REsource).

"Children are the future stakeholders of the coast," Graham said, "and it is important that we engage with them now in a way that is both fun and exciting to ensure our coast will be in safe hands in the future."



## FORMBY SIXTH FORMERS GET VOCAL!

Three talented young people have lent their support and talent to the animation created to educate pupils about the impacts of a changing Sefton coastline.

Joe Dimaline, Emily Hammond and Elliot Norton, all currently studying drama at Formby High School's Sixth Form, recently laid down voice tracks at the North Sefton City Learning Centre's radio studio.

All three acknowledged the importance of introducing the resources to Sefton's children: "With global warming being a massive issue today, we need to make sure that young children are aware of climate change."



From left: Elliot (aka Ralph), Joe (aka Sydney) & Emily (aka Priscilla)

"Without them, who knows what the future could behold. It will help them learn in a fun way, which we think will benefit them as they are likely to enjoy it more. It is also going to be easier for them to understand this way, which is vital as it gives them the necessary equipment to change the world and make a brighter future for all."

Speaking about their individual roles, all three actors enjoyed stepping into the shoes of an animated character, as Joe commented: "Being a squirrel for the day was really fun as I got to experience the 'nutty' side of the environment and see how we can all inspire change."

Supported by

Sefton Council



Investing in opportunities





# INVESTIGATING OUR CHANGING COASTLINE

A group of young people from St. Mary's RC Primary in Little Crosby have been investigating changes to Sefton's coastline over the years.

The children, aged 9-11, have met with experts from Sefton's Coastal Defence Team and the Coast & Countryside Ranger Service and visited two sites to study and report on issues relating to a changing coastline, how we have adapted to these changes over time and what we can do as individuals to mitigate against further changes through our own choices.

## Exploring Formby Point

The children met with Billy Haizelden from the Sefton Coast and Countryside Ranger Service who delivered a tour of the dune landscapes and the beach. Through active learning the children learnt and observed many important things about Formby's changing coastline such as:

- \* The position of the coastline is changing and we are currently losing 3-4 metres of sand dunes every year through coastal erosion, much of which is caused by rising tides and storms.
- \* The sand dunes are mobile, meaning the sand is easily blown around and often covers up signs and walking platforms the rangers put in to protect the dune system.
- \* The area is one of international conservation importance, being home to the Natterjack Toad, Sand Lizard and a number of rare plant species.
- \* The Formby Coastline in the distant past was a lot different to how it is today and was once home to hunter gatherers, evidence of which can sometimes be seen on the beach in the form of ancient footprints.



The serious issue of climate change was also discussed. As well as rising sea levels, it was explained to the children that due to climate change we could see a reduction in the Natterjack Toad population in the area. This is because the fresh water pools called 'slacks' that the toads breed in will dry up due to hotter temperatures and drier summer conditions.

Following the Formby visit, Billy explained the importance of the project: "It is important children understand the impacts

of a changing coastline because it is their coast, their future and they are the people it will impact on most. We need to deal with natural pressures such as sea level rises and climate changes and we also need to explain how recreation impacts on the coast. Explaining this to the children helps them understand the work we do as rangers to slow the erosion."

## Exploring mitigation techniques



Following the visit to Formby the children travelled to the Southport Eco Centre. Here they took part in workshops to reinforce what they had learnt in the morning out on the Formby Coast, to find out more about the effects of climate change and to examine things they can do to cut down their own carbon footprint to reduce the threat of climate change into the future.

The message of how the children can themselves become educators and take the lessons learnt back home is very important, as explained by young Essie May Gouldson following her visit: "As soon as I got home I told my mum all the things we were taught. She suggested turning off all the plugs we weren't using. I told her that we could save money and the environment! Yesterday my Nan said she took the bus to the gym and my dad even cycled to work!"

## Exploring Crosby Beach

Next our roving reporters visited the Crosby seafront to meet with Michelle Newton, a Coastal Officer from Sefton's Coastal Defence team. Before visiting the site, the class had studied the River Alt with their teachers and



the impact the river has had on the Crosby coastline as it flows into the sea at Hightown, an area where a lot of pupils at the school come from. Whilst visiting the area of Hall Road West it was explained to the children that the area they were standing was once the location of nine houses on the seafront.

Michelle explained this further: "In the early 1900's, the River Alt once flowed along the edge of the coastline and as it meandered along the coastline over time it caused severe erosion. This washed away the dunes and soon the gardens of a number of houses. Because of this seven houses had to be demolished in 1907 and another two houses were lost in 1929."

Other than the sea wall, Michelle pointed out to the children other things that had been tried in the past in an attempt to protect the coastline from further erosion such as the building of a training wall to divert the river Alt out to sea away from the coastline and the tipping of rubble: "In 1942 during World War II, rubble from houses that had been bombed began to be tipped here to protect the coastline." The children also observed the large boulders that were put in place in front of the coastguard station and car park during the 1990's and saw how they act as another form of defence by taking a lot of the energy out of the crashing waves.

Continuing the tour into the sand dunes, the children were keen to learn if the same habitats they saw at Formby developed in Crosby. Michelle said: "Natterjack Toads are not very successful at Crosby because of a lack of good fresh water slacks, but Sand Lizards are often found here."

The children could clearly see Formby Point in the distance where they had visited a few weeks earlier. The children were eager to know why there was no sea wall at Formby Point to combat the erosion as there is on other parts of the Sefton Coast. Michelle explained: "A lot of the sand eroded from Formby beach is transported by the sea northwards and southwards along the coastline to both Ainsdale and Crosby causing these areas to grow seawards. We call this accretion. Crosby Beach needs this sand to maintain the height of the

beach in front of the sea wall to allow it to act as a good sea defence. If Formby had a sea wall the sand would stop coming to Crosby and Ainsdale and this could have an impact on the Sefton coastline.

"Formby Point is more affected than other areas because as its name suggests it points out into the sea and when the tide comes in, it is the first point of contact to the incoming waves, therefore it is eroded more severely than other parts of the coast."



In concluding, Michelle said: "If coastal defences were not in place at this section of the Crosby coastline flooding and erosion would occur, leading to losses of high value residential and amenity land which has an estimated value of 10-15 million pounds."

Class teacher Mrs Brennan said: "It is important for the children to study and visit coastline development and realise how dynamic it can be. It can really surprise them – and us – to find out that the seafront looked rather different a generation ago, that certain features have totally disappeared and others have replaced them. It has highlighted various human efforts to protect the coastline and the relentless power of the sea."

Following the visits the pupils were invited to comment on what they had experienced. Niamh Ashton summed the end of the visit up perfectly: "We need to look after the coast or people in the future might not be able to have as much fun as we can now!"





## PUPILS LEAD ON PRESERVING DUNES

Pupils at Birkdale Primary are being given the opportunity to help develop their local area as part of the 'My Coast, My Future' project.

The pupils are developing ideas to be included in the future management of the Birkdale Hills and look at how people would like to use the site in the future with improved access. Part of the project will see areas of scrub being removed to open up the dunes and the creation of ponds to benefit the wildlife. The scrub is currently inhibiting access to the dunes and using up too much of the water that would otherwise support local habitats, particularly during hotter summer months.



Fiona Sunners from the Sefton Coast and Countryside Ranger Service visited the Year 4 class to hear some of the children's ideas for the site. These included pupil produced guides to the wildlife on site through both notice boards and internet based downloadable resources such as podcasts to act as a tour of the area and fun games such as animal bingo.

Speaking about the project, one of 19 in the successful Landscape Partnership Scheme Heritage Lottery Programme, Fiona said: "It is really important that the children feel that this is their project. As well as Birkdale Primary, we will be working with a number of other local primary schools and high schools to ensure true community engagement. It's vital we get across the message at a young age that we all have a part to play in the protection of our coastline."

## EDUCATING ON MITIGATION TECHNIQUES

Classes from St. Benedict's College in Liverpool have been visiting the Southport Eco Centre as part of a long-term project looking at energy uses, specifically how we use energy and how the world around us can create it.

Using the centre as a stimuli to help the visiting students foster a clear and concise understanding of how our own energy choices can shape the world around us, the two day visit also includes a tour of the Southport seafront and surrounding area



to study the changes on the coastline over the last hundred years.

David Wright, Science teacher and organiser of the project, said: "Our aim is to embed a thematic scheme of work for year 7 on Global Dimension, using Energy and Water as a learning platform. On the first visit to the centre I didn't know what to expect and more importantly whether it would meet the needs and standards to fulfil the educational development of all our pupils. This un-expectation was short lived as all the pupils engaged into all the activities and tasks straight away."

The pupils embraced sustainable travel for the day, travelling to the centre by both train and bus.

"If I evaluated the experience," David said, "I can only say that the pupils have learnt and developed the knowledge that they would not be able to understand in the standard classroom format, as there is nothing better than learning with a hands-on approach in a very comfortable and safe environment."

## CLIMATE CHANGE AND BIRDS

By Eleasha Jones from Marshside Primary School

At Marshside Primary School, we are in a unique situation being a school that has an RSPB nature reserve on our doorstep. Superior views can be seen when looking across fields of grasslands and marshes.

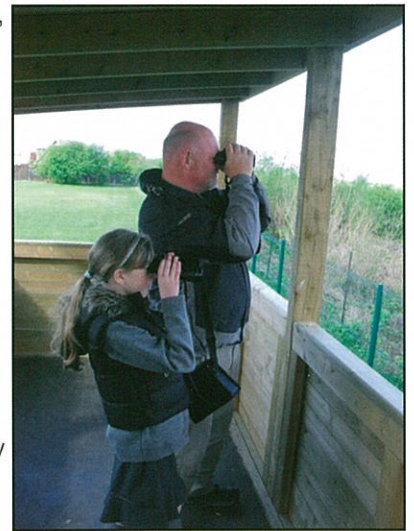
After meeting with Graham Clarkson, warden from the RSPB, on Marshside's observation platform we discussed how the serious issue of climate change could effect what we can view there in the years to come.

Particular species of birds that can be expected this year are the Avocets.

Marshside had none prior to the year 2000, but have recently gained up to 40 breeding pairs! They are typically found in warm climates, traditionally bred in East Anglia, Holland and France, but we have now seen a dramatic increase in numbers here. The other species breeding in important numbers at Marshside include Redshanks and Lapwings.

Graham said: "Some species that breed or migrate through here and winter in Africa, such as Yellow Wagtail, Cuckoo and Whinchat are decreasing in number, this may be because of desertification in the African wintering grounds."

Climate change could affect future bird numbers, but it is difficult to know if it will happen quickly or over a long period of time. The RSPB and other conservation organisations monitor the impact of climate change through regular surveys and keep records of this data. Graham commented: "There are no catastrophic bird population crashes yet, but some could be just around the corner. Unfortunately, some species won't be able to adapt and change. Marshside is a major stop-over point for many species, so climate change could have an impact, with us seeing different species, types and numbers."



Our eco reporter Eleasha studies the reserve with Graham Clarkson from the RSPB

St. Philips Primary school in Litherland used a trip to learn more about how climate change is affecting the Formby Coastline to also teach the children the benefits of sustainable transport, by using the train, bus and the power of their own feet!

Paul McCabe, Year 4 teacher at the school and the co-ordinator of the school's travel plan, highlighted the benefits of using public transport for the trip: "In teaching the children the problems of a changing climate, its important they consider all aspects of their lifestyle, particularly how they travel. We need to foster a good understanding of how the choices they make now, and further into their adult life, can have an impact on the future of both their local and global environment."

