



Sand Dune and Shingle Network

Fifteenth Newsletter, August 2012

Linking science and management



Introduction

Paul Rooney

Director – Sand Dune and Shingle Network



Welcome to another newsletter from the Sand Dune and Shingle Network. We will be very sorry to see Charlotte Durkin leaving us after all her work to get us where we are today. Charlotte has gained a permanent position with the Environment Agency as a Geomorphology Technical Officer, working on aspects of the Water Framework Directive. We wish her all the best for the future, and for her wedding to Fred in August! Ffion Redmond, our graduate intern, also leaves us at the end of July to focus on her research thesis as the final part of her Masters studies. Good luck Ffion.

So, just as soft coasts change, so do the staff serving the Network. John Houston and I remain, and I hope to advertise and appoint a new Network Assistant as soon as possible in early autumn. Our work will continue.

I was saddened to see the recent opening of the Trump International Golf Links in light of opposition to the course, criticism that it damages the local environment and claims from the Trump Organization that it does not. This reminds us of the urgent need to champion the special nature of our dune and shingle coasts. By raising awareness of their unique values and wild character I hope that, in the future, this will override short-term economic interests as evident in the Trump development.

I made the following press statement regarding this development.

“The Trump Organisation golf course development at Menie Links is a model of unsustainable development. It has destroyed one of the most valuable dynamic dunes in the UK. This was done while governments and environmentalists alike are working hard to try to conserve and promote similar moving dune features. Dynamic dunes are more resistant to erosion processes, cheaper to maintain, flexible and responsive, have higher natural values and are more sustainable.

The Trump Organisation’s claim that they have improved the environment, and not damaged it, is simply not true. It demonstrates their fundamental misunderstanding and disregard for the intrinsic nature of coastal dunes and their high natural values. Moving sand is the life blood of dunes. The Trump development has stabilised dunes and reduced the site to a mere shadow of its former self.

It is perfectly possible for coastal dune conservation and golf to sit together comfortably. The lesson learnt for golf and nature conservation is that the Trump development at Menie is an outstanding example of how not to do it.”

Looking forward, please see the notice of our Dune Scrub and Woodland conference at Liverpool Hope University 12th – 13th September 2012. There are still places left, but book quickly. The event has attracted an excellent range of speakers, and is not to be missed.

Network News

Charlotte Durkin & Ffion Redmond



After two and a half years with the Network, this will be the last newsletter I edit as I will be leaving on 31st July. I am taking up a post with the Environment Agency working with rivers,

lakes and transitional waters to introduce a geomorphological way of thinking into Water Framework Directive work. Thank you all so much for your contact, input and interesting pictures over the years. I have loved putting the newsletter together and will of course remain a subscriber!

The Network continues apace with several interesting projects and collaborations developing. The Dune Scrub and Woodland Conference registration is in full swing. If you have not registered yet please do it straight away.

Our annual Masters’ students trip to the Netherlands was a success, although it was clear that budget cuts in many organisations had taken their toll because we were without any UK professionals for the first time. We were joined, however, by several European colleagues. I hope those of you who weren’t able to come can learn from our experiences (shared on Page 9).

We have two small contracts with Scottish Natural Heritage and Natural England to assist with collating information for the EU reporting on the Habitats Directive (Article 17 reporting) and to provide support materials for conservation officers.

This will also be Ffion’s last newsletter as her (slightly extended) internship comes to an end. It has been fantastic to have another pair of hands on deck as it allows us not only to complete things quicker but also revive jobs that have been put on the back burner and start new ones. Ffion will complete her Masters degree soon including a dissertation on the effect of wind farms on breeding birds. We wish her every success in her future career and hope the experience gained at the Network will help her get that first job.



Dune Scrub and Woodland Conference

Come and join us for two days of lively debates, networking and excursions on the broad theme of sand dune scrub and woodland. There are just a few weeks to go until the conference on 12th and 13th September and we have a range of very affordable options (detailed below).

In the UK the issue of scrub on dunes and whether dune woodland is a natural and welcome component of the dune system has been taxing conservation advisers and site managers for decades. The conference is an opportunity to share our current views, look at evidence for and against an increase in woodland, and to set these discussions in a European context using the Habitats Directive.

The UK conservation agencies have generally not recognized scrub and woodland as a component of dune systems. Sea Buckthorn is native only to the east coast of England (and is only a feature of Natura 2000 sites in this region) and there are no sites in the British Isles with the EU habitat type 2180 'Wooded Dunes of the Atlantic, Continental and Boreal region'. Yet, as our excursion will show, there are already several native and non-native scrub and woodland communities on UK dune systems.

Professor John Rodwell will be our keynote speaker and will address the challenges of managing an inherently dynamic ecosystem as well as dealing with 'change' in nature conservation management. Scrub is a natural stage of succession on dunes, which can progress to woodland but has an important biodiversity value of its own. In recent decades there has been an increase in the amount and range of scrub on dunes and dune slacks. There is considerable debate about the causes of these trends and how managers should respond. Examples from the Netherlands and Belgium at the conference will give useful examples from our wider region.

In the British Isles Sea Buckthorn *Hippophae rhamnoides* scrub is generally considered to be an alien or invasive plant (outside its native range on the East coast of

England). Its management takes up significant resources and there is a need to revise the national strategy. Should there be more tolerance of the species? Experts in invasive species control from Italy and the Netherlands may be able to offer advice at the conference.

The full programme, which outlines all abstracts being presented, can be downloaded from the website www.hope.ac.uk/dunewoodlands

The conference attendance rates are:

1 day non-residential package 12th September: £70
(Conference fee, buffet lunch and tea/coffee etc.)

1 day non-residential package 13th September: £55
(Conference fee, return coach trip to field excursion location, lunch at a golf club)

2-day non-residential package 12th/13th September: £100
(Conference fee, buffet lunch, tea/coffee etc., return coach trip to field excursion location, lunch at a golf club)

Residential package 12th/13th September: £145
(Conference fee, buffet lunch, tea/coffee etc., bed and breakfast in an en-suite room on the 12th overnight, return coach trip to field excursion location, lunch at a golf club)

There is an optional conference meal on the 12th September costing £15. This is a 3 course meal and wine will be provided.

An extra night bed and breakfast can be purchased for £35 per person per night. This will be especially useful for those travelling some distance who may need to arrive the night before.

European protected species on UK sand dunes

The Habitats Directive of 1992 established lists of European protected species. Those on Annex II of the Directive are those whose conservation requires the designation of Special Areas of Conservation. Of these the most important on dunes are the Fen Orchid *Liparis loeselii* var. *ovata* found on two main dune areas in South Wales, Petalwort *Petallophyllum ralfsii*, a feature on 10 sand dune SACs and noted from four other sites and Shore Dock *Rumex rupestris* found on Penhale dunes and one other site. Fen orchid and Petalwort are targeted in Plantlife's dune flora appeal (<http://www.justgiving.com/dunesappeal/>).

Species on Annex IV of the Habitats Directive are those in need of strict protection at EU level. The most familiar species in this category are the Sand Lizard *Lacerta agilis* and the Natterjack Toad *Epidalea calamita*. Amphibian and Reptile Conservation (ARC <http://www.arc-trust.org/>) champions the conservation of these species in the UK through monitoring, advice and practical management.

The Natterjack in Britain today

John Buckley, Amphibian Conservation Officer, ARC



Natterjack Toad (*Epidalea calamita*) © ARC

Following the first indications of widespread global amphibian declines about 20 years ago a rapidly expanding research effort has attempted to quantify the extent of these declines and understand their causes. The global amphibian assessment (GAA) by the IUCN in 2004 indicated that amphibians had decreased more rapidly over the previous 30 years than other vertebrates for which data were available. This and other studies highlighted multiple likely causes including habitat destruction, climate change, agrochemicals, pollution, enhanced UV-irradiation and emerging diseases e.g. the chytrid fungus. Further factors identified in Britain are road mortality, pond acidification, inbreeding in isolated populations, and, in the case of the Natterjack Toad (*Epidalea calamita*), competition from the common toad (*Bufo bufo*) after habitat change.

The Natterjack Toad is a creature of open habitats. It is an active predator and thrives where there are large areas of bare ground, or very short vegetation, and shallow, unshaded, ephemeral pools. It burrows well to avoid extremes of temperature and dryness and its long breeding season allows for the unpredictable nature of ephemeral ponds. The Natterjack's three main habitat types in Britain are sand dunes, upper salt marshes and heathland. Population decline has been witnessed in all three types but the most severe

decline has been on heathland habitats.

A sound knowledge of former distribution is essential for re-introductions. Knowledge of Natterjack distribution at a 10 x 10 km² level was essentially complete by 1970 and thereafter intensive study discovered increasing numbers of individual populations within these squares for a further 20 years. There were many more Natterjack sites in the years before the 1970s; it is estimated that the remaining populations represent only 20-30% of those in existence a century ago. These populations are monitored every year by local surveyors, site managers and volunteers. Their annual reports confirm continued presence and the number of spawn strings found indicates population size. Details including metamorphic success are summarised in the Natterjack Toad Site Register for the UK.

Data from the decade 2000 to 2009 suggests that, very approximately, the total adult breeding population of the UK in 2009 was 4,000 individuals. Seventy percent are found on the west coast bordering the Irish Sea, with slightly more on sites along the Merseyside Coast and North Wales than in Cumbria and along the Scottish Solway. The remaining Natterjacks are on sites in East Anglia and the south of England. Overall the British Natterjack population was stable between 1999 and 2009. However, trends differed among the regions. In southern England and the South Irish Sea areas (Merseyside and North Wales) populations overall were rising; in the North Irish Sea region (Cumbria and the Scottish Solway) they were stable; but in eastern England they were declining. Trends of decline correlate with the proportion of years in which no toadlets were produced.

The 1999 edition of the Site Register considered the 38 known native localities to be separate populations. The population structure has now been rationalised on the basis of genetic studies to determine which are true population metapopulation clusters rather than arbitrary survey sites. There are now considered to be 13 true native populations (some with several subpopulations) and 16 successful translocations. However translocations are not an easy conservation option. The average size of native populations is four times that of translocated ones and more than 77% of British Natterjacks live in native populations. With increased understanding of Natterjack ecology the success rate for post 1980 translocations has improved to an average of 67%, but it remains far easier to re-establish Natterjacks at coastal dune sites (75%) than on heathland ones (58%). Clearly the main thrust of conservation effort should be to maintain native colonies with some effort put into translocations.

Chytrid was first identified in Natterjacks at a site in Cumbria and has since been found at many sites on the west coast. At places where Natterjacks have declined it is hard to decide whether this is due to the effects of chytrid or simply adverse changes in the habitat. It may yet prove to be the case that whilst chytrid is affecting individuals it is not having an effect on the populations where the habitat remains good. Chytrid is present at the two biggest thriving Natterjack colonies in Cumbria.

Despite all the conservation effort Natterjack numbers have not risen over the last decade and we are in the position of having to work hard just to stand still. Fortunately the analysis of data for 1970 – 2009 shows a way forward. At sites where there is grazing, Natterjack populations are faring better than those where this is not the case. Conservation effort should now be directed more towards the terrestrial elements of the Natterjack habitat since pond creation and management are relatively well understood and implemented.

Global amphibian assessment: <http://www.amphibians.org/asg-amphibian-specialist-group/>

Sand Lizards and Natterjack Toads on the Sefton Coast

Nick Moulton, Reptile Conservation Officer, ARC



Sand Lizard (Lacerta agilis) ©ARC

The Sand Lizard (*Lacerta agilis*) is the rarest of the three native lizards in the UK. It is stocky and more robust than the Common Lizard (*Lacerta vivipera*). Sand Lizards have dark spots with a light centre on their sides and backs. The females are generally grey and/or brown with large, bold markings. The males develop vivid green flanks on emergence from hibernation in the spring until late summer.



Morfa Harlech dunes provide areas of open sand, helpful to Sand Lizards breeding. © ARC

In the UK, Sand Lizards are restricted to dry lowland heathland and Marram grass (*Ammophila arenaria*) dominated areas of sand dunes, such as that shown above. The most important habitat features for Sand Lizards are dense dwarf shrub or similar vegetation structure at ground level, areas of open sand for egg-laying and warm southerly facing aspects.

Due to previous large-scale loss of heath and dune habitats and their corresponding endangered species, UK Habitat and Species Action Plans (HAPs & SAPs) have been implemented to reverse this decline. The HAPs protect

remaining sites and, if possible join them together, and manage and monitor them to ensure they are in favourable condition. The presence of both Sand Lizard and Natterjack Toad assisted in the designation of both the Sefton Coast SSSI and SAC. They are listed under the Wildlife & Countryside Act, 1981 and the EU Habitats Directive as species of European significance. They are also included within the UK Biodiversity Steering Group Report as priority species for conservation action and are the subject of national and regional Species Action Plans.

It was estimated by Keith Corbett and others that a decline of c.8-10,000 Sand Lizards to a few hundred occurred on the Sefton coast from post-war until the 1970s. Loss of habitat by land-use development was the main factor. Current improved monitoring by Amphibian and Reptile Groups (ARGs) is allowing a more positive conservation estimate based on favourable dune system and site management regimes, slightly increasing population trends and restoring their former historic range via re-introductions.

The Sefton Coast Sand Lizards are the northernmost colony within the UK and have been isolated from the two other remaining colonies, on the Dorset and Surrey heaths, for thousands of years. They have evolved and show different colouration and marking than the southern animals, genetic research is currently being undertaken to assess this.



Juvenile Sand Lizards © ARC

The Sand Lizard and Natterjack Toad are both poor colonisers and non-mobile. In general they cannot re-colonise our fragmented dunes and heaths. As part of their SAPs re-introduction strategies have been developed to look at restoring the species at suitable sites within their former historic range. To date there have been 74 Sand Lizard translocations (65% successful, 15% ongoing though doing well, 12% limited success e.g. damaged; mainly by large heath fires/lack of appropriate management, 4% failed and 4% are currently unknown). This has successfully re-introduced the species to both heathland and dune (c.20 sites) habitats in 11 vice-counties in England and Wales. In total c.9000 animals have been released, mostly captive bred at centres such as Chester Zoo.

Natterjack translocations are intrinsically more difficult than those for Sand Lizard because the new site has to provide both suitable aquatic and terrestrial habitats. As a pioneering species natterjacks require open habitats with extensive areas of bare ground and short vegetation. On less dynamic sites, grazing is required to keep the vegetation short enough for the species habitat requirements. About 20 translocations have been undertaken in Scotland, Wales and England and c.66% have been successful. All of the translocations to dune and upper saltmarsh (merse) habitats have been successful.

New species on the Sefton Coast sand-dunes

Philip H. Smith



Rough Clover (Trifolium scabrum) © Phil Smith

Coastal dunes are renowned as one of the most biodiverse habitats. Thus, England's largest dune system on the Sefton Coast, Merseyside, supports over 3300 invertebrates and nearly 1200 vascular plants. Although biological recording has been ongoing here for more than 150 years, new species are constantly being discovered. The most recent botanical find in June 2012 is Rough Clover (*Trifolium scabrum*), growing in some quantity on a sparsely vegetated area of grassland near the Ainsdale Discovery Centre. This is a first record for the South Lancashire vice-county of an uncommon native species that has a mainly southern and coastal distribution in Britain. Since 2005, an average of 12 new vascular plants per annum has been added to the Sefton Coast inventory, though many of these are non-native garden-escapes.



Slender Ground-hopper (Tetrix subulata), recorded on Freshfield Dune Heath © Phil Smith

Another recent southern invader is the Slender Ground-hopper (*Tetrix subulata*), a miniature relative of the grasshoppers, first noted in slacks at Birkdale in April 2011. It has since been recorded along the length of the dune coast from Hightown to Southport and is spreading north to other parts of the region.

Whether or not these observations reflect the influence of climate-change is unclear but these species are unlikely to have been overlooked by earlier recorders.

There is a pressing need for further studies to monitor changes in species distributions. These provide important insights into habitat condition, such as the widespread problem of increasing dune stability, as well as larger-scale impacts such as climate-change.

Little Terns nesting near Prestatyn are protected by an electric fence

Little Terns (*Sterna albifrons*) will be protected by an electric fence at their only colony in Wales on Gronant beach near Prestatyn. These rare birds colonise the Welsh coastline for three months of the year after flying 4,000 miles from West Africa each May. Little Terns are protected by Annex 1 of the Birds Directive and the breeding population at Gronant was a qualifying feature in designating the Gronant Dunes and Talacre Warren SSSI. Favourable condition for the Little Tern at Gronant has been defined as greater than 40 breeding pairs and a minimum of 66 young fledged.

The birds feed on Sand Eels and nest on a shingle ridge amongst the sand dunes, but are at high risk of disturbance from the weather, high tides and human interference. They are also in danger of predation from foxes and other animals during their nesting period.

Denbighshire Council took measures to safeguard the birds with the help of volunteers by erecting a one and a half mile fence which is electrified at night. In addition to the fence, wardens patrol the area by day to ward off predators, work which the council describes as vitally important. The fence, which was funded by Haven (a nearby holiday park operator) also benefits Little Ringed Plover and Oystercatcher.

Denbighshire BAP statement: [http://www.denbighshire.gov.uk/CE/Councillors.nsf/549d86137889b6ac80256d58004cc70a/3602183e3afa4411802570b300417753/\\$FILE/Little%20Tern%20Action%20Plan.pdf](http://www.denbighshire.gov.uk/CE/Councillors.nsf/549d86137889b6ac80256d58004cc70a/3602183e3afa4411802570b300417753/$FILE/Little%20Tern%20Action%20Plan.pdf)

Sea buckthorn clearance from sand dunes at Pembrey Country Park

Sea buckthorn was planted by the Forestry Commission at Pembrey Forest in the 1930s to stabilise sand dunes. Since then it has established itself very successfully, and is now the dominant shrub within the Pembrey Country Park. Dense Sea Buckthorn stands now cover large areas of the dunes, with both male and female plants producing extensive rhizomes, enabling them to spread rapidly into the surrounding area. As it is a nitrogen-fixer this results in a permanent change of habitat to scrub/ emergent woodland. At Pembrey Country Park the aim is to remove most of the mature Buckthorn stands, in order to try and encourage the return of the original fixed dune habitat.

The Buckthorn clearance work began in February 2011,

with 2.2 acres (0.89 ha) being cleared at a total cost of £2000. The money was grant aided by the Countryside Council for Wales (CCW). The method utilized was the use of a digging machine fitted with a specially fabricated 'rake', which enables the operator to dig down below the Buckthorn roots before lifting the whole plant out of the ground. The discarded buckthorn was later removed and placed into skips provided by CWM Environmental.

The work continued from November 2011 to March 2012 with the aid of a successful grant application to CWM Environmental for £10,000, and another £10,000 provided on a match-funding basis by Carmarthenshire County Council and CCW. A further £700 has been provided again by CCW through the LBAP grant funding provided to the council. Buckthorn clearance progress has been made over a much greater area of the dunes than was originally expected. The problem of Buckthorn disposal has again been solved by the provision of skips by CWM Environmental and a tractor to transport the waste.

Swansea University have shown an interest in the project, with a MSc student starting work on a dissertation on the changes in flora and fauna and physical factors as a result of the Buckthorn removal and clearance work. This is a part of an 'Access to Masters Initiative' (an EU funded programme).

In the future it is hoped that similar grants will be available to continue the work. In particular the prevention of re-growth of the Sea Buckthorn to consolidate the work already achieved. This could be done in the form of mowing new growth with a flail mower, a method already utilized on the area cleared in February 2011. Another possibility would be to fence the cleared area and introduce Exmoor ponies to graze at appropriate times of year. Low points in the dunes would be excavated to expose the groundwater and thereby creating a dune slack as well as a watering hole for the ponies.

For more information contact Wyn Parry at WParry@carmarthenshire.gov.uk

National Trust introduce summer Cattle Grazing at Whitepark Bay



Cattle on the beach at Whitepark © National Trust

The National Trust owns and manages 125 miles of coastline in Northern Ireland including sand dunes at Murlough NNR, Portstewart Strand, Grangemore and White Park Bay. Recently grazing has been re-introduced at Portstewart and increased at White Park Bay. Conservation and access warden, Barry Crawford explains the rationale behind the project.

Cattle belong to a local tenant farmer, and under license are grazing the sand dunes at the request of the National Trust. The sand dunes and dune/chalk grasslands at both Portstewart Strand and White Park Bay respectively are rich in wildlife, particularly the plant life and butterflies/moths. White Park Bay currently supports nine species of orchid, whilst eighteen butterfly species have been recorded in the sand dunes at Portstewart, as well as several rare day flying moths (including the scarce crimson and gold) and the northern colletes bee. The key habitat requirement for these species and others typical of fixed dune habitat is a short grass sward between 5-12cm and some bare sand.

This is where the cows come in to play, or rather 'work' to keep the grasses/scrub in check. If the sites were not managed through cattle grazing, the dunes would become overgrown with invasive scrub and coarse grasses, which would drown out and strangle wild flowers and other plant species. The sand dunes are locally referred to as The Warrens – a clue to the identity of the other full-time grazing residents, the rabbit population. However rabbit numbers fluctuate due to myxomatosis disease and a short enough sward cannot be guaranteed through rabbit grazing alone.

Another key reason for why cows are munching here, is that both sites are declared as SACs (Special Area of Conservation) and ASSIs (Area of Special Scientific Interest), and the key requirement for these legal designations is a closely grazed dune turf/sward, rich in wild flowers. Hence the cows generally graze the sites over the autumn-winter/early spring, enabling an explosion of summer flowering plants and in turn supporting the insect/bird life. In spring at White Park Bay, primroses and violets flourished due to the positive effect the cattle grazing had and in June the meadow cranesbill was abundant. And in 2010, with agreement from the Northern Ireland Environment Agency (NIEA), through an agri-environment scheme, cattle grazing was extended to a 12 month grazing period at White Park Bay.

At Portstewart Strand, the Belted Galloway cattle can be observed congregating at the back of the sand dunes. This rare breed, are nicknamed 'belties', have thick winter coats and are well adapted to survive winters on Ireland's North Coast. The Portstewart cows stay within the dunes, with access to the Blue Flag award beach strictly off-limits. However escapes do occur from time to time.

The White Park Bay herd on the other hand do have full rights to the beach, as here there is little or no fencing, as this is a truly wild site. Again the cows here are a tough breed, purposely sought from Rathlin Island, where they are bred for outside conditions all year round. The White Park Bay herd are more used to people and tend to be a bit

more flamboyant. However a code of conduct and signage encourages respect and safe practice to promote harmony between walkers and 'happy cows'. Some additional fencing has been installed in close proximity to key public access area to beach, and a 12 hectare enclosure at the east of the bay (to be used during chemical spraying periods and or excessive visitor times / one-off beach events). Or future hot summers!

Barry Crawford (Conservation & Access Warden)

<http://www.doeni.gov.uk/nea/coastalsanddune-3.pdf>

Saving Dune grassland in East Lothian

Coastal grazing encourages species rich grassland. As part of the first phase of a UK-wide HLF Lottery funded project called "Saving our Magnificent Meadows", co-ordinated by the charity Plantlife, East Lothian Council is undertaking a reintroduction of grazing to 4 areas of the county. All the sites are owned and / or managed by the local authority and all have varying levels of nature conservation designations and significance. Two of the areas are coastal – Barns Ness comprises unimproved grassland overlying a raised beach, and Aberlady Bay LNR has a series of habitats from salt marsh to high dune.



Sheep grazing the Aberlady Bay site © East Lothian Council

At both sites, site condition monitoring identified a tendency (in places) for rank grassland species to become more dominant, reducing botanical diversity. In order to address this problem, in 2007 the countryside section of the local authority began to trial limited grazing by sheep at Aberlady to see if this would have a beneficial effect upon sward height and species diversity. The results gained so far have been extremely positive (they even ate sea buckthorn!), which is why, in 2010, the local authority joined in with the other partners to work up a submission for HLF funding. The project, after some to-ing and fro-ing, has now been awarded its first round pass, and partners have a year to develop the bid into a final delivery phase that will run from 2013-2016.

Within East Lothian, the main delivery phase of the project will include the creation of new infrastructure for a wider grazing programme. A number of activities will be initiated to engage with and involve local community groups in the project's delivery. A fundamental part of this is developing

volunteer lookers' who can regularly check on the animals' health. And I say animals, as although we have trialled sheep, we are currently enjoying the efforts of some Exmoor ponies at another location and may wish to expand their role. Similarly, there is hope that local farmers may see the opportunity to increase their cattle stock and supply suitable breeds – e.g. Dexter cattle, to provide some alternative form of grazing.



Rank grasses have taken over at Barns Ness ©East Lothian Council

Plans are in place to monitor the effects of the grazing via a series of volunteer recording programmes. So, hopefully from a rank mass of *Arrhenatherum*, the species rich grasslands, characteristic of fixed dunes, may proliferate once again...

The **Saving Our Magnificent Meadows project** is a nationally-coordinated programme of action to save the UK's remaining wildflower-rich meadows and grasslands. The project partnership consists of 11 organisations from across the UK:

Plantlife (leading the project)

- The Conservation Volunteers
- Cotswolds Conservation Board
- East Lothian Council
- Northumberland Wildlife Trust
- North West Kent & Medway Valley Countryside Partnership
- Pori Natur a Threftadaeth (PONT)
- Somerset Wildlife Trust
- Ulster Wildlife Trust
- RSPB
- Wiltshire Wildlife Trust

The project is also supported by Natural England, Scottish Natural Heritage, Countryside Council for Wales, Northern Ireland Environment Agency and the Grasslands Trust.

For further info please contact:

Duncan Priddle,
Countryside Officer
dpriddle@eastlothian.gov.uk

Vikki Fenner
Development Manager,
Saving Our Magnificent Meadows project
Vikki.fenner@plantlife.org.uk

Study tour to South Holland



In May 2012, the Network visited the Netherlands as part of the annual trip made with MSc Environmental Management students. For the first time, we were not joined by any UK dune professionals. However, once in the Netherlands we met up with a number of experts and key people from the European Dune Network including Fred van der Vegte of the Foundation for Integrated Dune Management, Dr. Maike Isermann of the University of Bremen, and Luc Geelen of Waternet. We had the privilege of talks and guided tours from many distinguished people such as Jan Mulder (instrumental in developing the Sand Motor), Harrie van der Hagen (Dunea water company) and Gert de Groot and Marten Annema (Natuurmonumenten). As always we are so grateful to those who give up their time to share knowledge with our group and thus further the objectives of the European Dune Network.

This year, the group visited some of the most industrial and heavily populated areas of the Dutch coast from Scheveningen in the North to Voorne, just South of Rotterdam. It was interesting to see examples of how the country balances the need for economic growth with nature conservation objectives, coastal defence priorities and providing opportunities for recreation. One of the most striking examples of this is the 'Sand Motor' (De Zandemotor), formed off the coast from Solleveld, South of the Hague. The enormous undertaking provides coastal protection and recreational space, but, required careful consideration of surrounding nature areas and drinking water abstraction activities.

This particular part of the Dutch coast has been in retreat since the 16th century losing around 400 – 500m to the sea since that time. Suppletion of the beach and foreshore with sand has mitigated this loss somewhat but the idea of actually increasing the extent of the coast arose some time during the 1980s. 40 million m³ was required to build out the coast by 1km which will mitigate the effects of increased sea level rise, based on the 1/10000 year flood. A project of this size was enough to tempt some of the Dutch dredging ships back from the near and far East, whereas normal suppletion projects in the range of 2 – 4 million m³ cannot compete with lucrative construction projects further afield.

The motor consists of a comma shaped area of sand

which over time will disperse throughout this part of the coast, building up beaches and dunes to enhance flood protection. It is hoped that the Sand Motor can help to create 35ha of new dunes in the area. The work draws on the concept of 'building with nature' as the sand will be distributed by the dominant currents which create longshore drift in a South to North direction. After 20 years it is anticipated that the sand motor will have dispersed, although under current rates of dispersal, it may take less time.

The Solleveld dune area is a relatively small fragment of the Dutch dune resource, but combined with others nearby, around 450ha of dunes make up the region. They are heavily modified by the actions of man, apparent from the coppiced oak woodland to planted pines and drainage channels. The de-calcified dune system includes an area of dune heath, rare in the Netherlands. Reedbeds here are artificially created but are valuable habitats for waterfowl.

Our group also made a visit to the Maasvlakte where expansion of the port facilities will have an impact on dune systems to the South at Voorne. One of the management objectives for the site is to increase the areas of open and mobile dune habitats to 40% from 10%. Increased nitrogen deposition as a result of power generation and emissions from factories would encourage the growth of tall grasses and scrub at the expense of dune species and open dune habitats. As a result, the companies involved in the Maasvlakte expansion have pledged 1.1 million € in funds to tackle biomass removal on Voorne dunes.



Elsewhere, on the Quackjeswater, Eurasian Spoonbill *Platalea leucorodia* and Great Cormorants *Phalacrocorax carbo*, breed on this internationally important wetland site.

At the Westduin park, the proximity of The Hague and its one million people means managers must find a compromise between nature conservation values and the need to provide recreation opportunities. Encroachment of scrub onto open dune habitats is also a problem here, partly because of atmospheric nitrogen deposition but also artificial nutrient enrichment from dogs.

<http://www.sandengine.nl/>

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The encroachment of tall grasses and shrubs in coastal dunes results in the loss of vegetation heterogeneity. This process of encroachment is mainly caused by increased levels of atmospheric nitrogen deposition, decreased grazing intensity by rabbits and land use practice changes. The degradation in habitats occurred through a decrease and loss of open sand, early successional stages, small herbaceous plants and lichens, and a loss of microclimatic conditions. This loss of heterogeneity in coastal dune habitats is expected to have negative effects on animal diversity, by limiting the possibilities for thermoregulation, foraging and breeding. To counteract encroachment and develop structural heterogeneity grazing is a widely used management practice and can increase the heterogeneity of the vegetation.

The aim of the study was to functionally interpret changes in vegetation composition and configuration following grazing management on habitat suitability for Sand Lizards. The study area is located in the inner dunes near Castricum, Netherlands on land which is grazed by cattle and ponies. Aerial photographs taken over a period of 16 years were used to quantify changes in vegetation composition. A GIS based method was developed to calculate habitat suitability for Sand Lizards in a spatially explicit manner, encompassing differences in vegetation structure and patch size. From 1987 to 2003 dune vegetation shifted from small patches of moss and

sand to larger patches covered by shrubs and grasses. Grazing management did not have any significant effect on the overall level of heterogeneity, measured as habitat suitability for Sand Lizards. However, on a more local scale highly suitable patches in 1987 were deteriorating whereas unsuitable patches became more suitable in 2003. This inversion results from a broad shift with shrubs being a limiting habitat element in 1987 to sandy patches being the limiting element in 2003. Future changes are believed to negatively impact Sand Lizards. The habitat suitability model has proven to be a useful tool to functionally interpret changes in coastal dune vegetation heterogeneity from an animal's perspective. Further research should aim to include multiple species operating on different scale levels to fully capture the natural landscape dynamics.

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Managed Realignment

The Online Managed Realignment Guide available from the link below includes case studies and a wealth of information on all aspects of managed realignment. On the home page there is also a link to a paper presented at an Institute of civil Engineers conference entitled Lessons from 20 years of realignment in the UK.

<http://www.abpmer.net/omreg/>

LIFE+ projects

More LIFE for Dutch dunes

Congratulations from the dune network to Luc Geelen and the team at the Waternet (Amsterdam Waterworks Dunes) for their successful application to the EU LIFE+ programme for a major dune restoration project.

The overall aim of the 'Amsterdam Dune' project by the Waternet Foundation is to restore and improve the characteristic and priority habitat types listed in the Habitats Directive that are part of the *Kennemerland Zuid Natura 2000* site. The recovery of the area will be encouraged by actions targeting the effects of desiccation and eutrophication, such as the removal of the nitrogen-rich top layer of soil and of invasive species; by restoration of ponds; and by mowing, grazing, and other nature management measures.

We will include more information on the project in the next newsletter and look forward to following progress on our annual visits to the Netherlands.

Endemic plant conservation in Sicily

Also receiving support from the EU LIFE+ programme in 2011 is a project 'Leopoldia' run by the University of Catania. The objective of the project is to re-establish and protect the sand dune habitats that are most suitable for the conservation and spread of *Muscari gussonei* (or *Leopoldia gussonei*), a priority plant species (IUCN-endangered) endemic to Sicily. *Muscari gussonei* grows in few fragmented populations the largest of which is c.1000 individuals. The species is threatened by nomadic livestock, coast erosion and tourism infrastructure development.

LIFE on the coast of Northern Jutland

The third project of interest in the 2011 LIFE+ selection is 'LIFE Laesoe' coordinated by the Nature Agency Vendsyssel to address threats to habitats and associated species on the Jutland peninsula in northern Denmark. The project's overall objective is to restore birdlife and Laesoe habitats of EU importance by establishing a sustainable grazing system and improving the conservation status of coastal habitats, dunes, wetlands and grasslands.

More information on LIFE+ projects and contacts for these projects can be found in the EC press releases at <http://ec.europa.eu/environment/life/news/press/index.htm>



Other updates

OURCOAST Brochure

OURCOAST have announced the completion of all their project activities. The final OURCOAST Brochure "Integrated Coastal Zone Management: OURCOAST outcomes and lessons learned" is now available online, as well as the Executive's Summaries translated in ten languages. Please go to the website to view the brochure: <http://ec.europa.eu/ourcoast/index.cfm?menuID=19>.

In the document as you will find the lessons learned and outcomes of the OURCOAST initiative together with recommendations on how to further develop and implement ICZM in Europe.

The European Commission has launched the OURCOAST initiative to support and ensure the multi-lingual exchange of experiences and best practices in coastal management in Europe, so that the integrated approach to coastal zone management is further promoted throughout Europe, ultimately aiming for a sustainable use of coastal resources. After three years of running the initiative, OURCOAST has shown that exchanging coastal planning experiences opens debates, allows broad dissemination of project data, and at the same time respects the differences in management approaches and budgetary opportunities.

However, reaching the end of the 3-year project does not mean that the OURCOAST initiative is finished. On the contrary! OURCOAST is an ongoing initiative that will be continuously available on the European Commission DG-Environment website <http://ec.europa.eu/ourcoast/>. You can find there all relevant

ICZM documents and contribute to it by making your practise and experience known. It is expected that ICZM case studies will be added, used and that the OURCOAST community will be constantly growing. OURCOAST encourage you to provide your views, feedback and become or stay an active participant in the implementation and development of ICZM in Europe.

BARS updated

A new version of UK Biodiversity Action Reporting System (BARS) is now available (<http://ukbars.defra.gov.uk/>). The system offers a range of powerful mapping and summary tools. It will provide an important source of evidence to support delivery and reporting of work within the UK to protect and enhance important habitats and species. The new system will enable the user to:

- Contribute information about biodiversity actions
- Use the action maps to explore the geographic distribution of action data held in BARS
- Use the action reports to find out how much action is being undertaken for specific biodiversity features or within a specific location

Building data content is now the priority to make the most of functionality. A number of projects are now underway to recruit large national datasets including data derived from the Higher level Stewardship Options applied in England. This will complement the efforts of individuals and organisations to populate the system with actions via the input screens.

The new system replaces the previous version originally launched in 2004. The old BARS is still accessible, but it is no longer possible to edit or add data in that version.

This newsletter has been compiled by Charlotte Durkin, Ffion Redmond, John Houston and Paul Rooney

Contact dunes@hope.ac.uk

Website www.hope.ac.uk/coast

Cover Photo: Aerial view of the Sand Motor and Solleveld dunes © Rijkswaterstaat/Joop van Houdt

The Sand Dune and Shingle Network is based at Liverpool Hope University

