



HELFORD

Voluntary Marine Conservation Area

Newsletter No. 45 Spring 2013

Landslips at Prisk Cove

Prisk Cove, stretching from Rosemullion Head to Shag/August Rocks, forms the northern seaward margin of the outer HVMCA and comprises a particularly long and wide intertidal zone, cherished by rock pool enthusiasts and marine biologists. The cliffs behind much of the cove are formed of loose stony material known as 'head', which is constantly collapsing to replenish the shingle beach in front of the cliffs. This winter the most recent collapse was particularly spectacular and occurred south of the access slipway (Fig). This 'head' was formed during the Last Glaciation when Cornwall was suffering conditions much like those of Siberia and northern Canada today. During the arctic summers the frozen soil on the hills behind melted and flowed downhill over a former cliff line to cover an earlier intertidal zone, formed at least 125000 years ago.



Recent landslide caused by failure of 'head' bounding northern part of Prisk Cove.

Indeed if you look carefully beneath the 'head', you can see a raised beach, formed at slightly higher sea level than present. The intertidal zone in front is clearly inheriting a rock platform cut by the waves over a hundred thousand years ago.



Recent history of cliff failures adjacent to the County Geology Site with its unusual lamprophyre.

Towards Shag Rock and Parson's Beach the cliffs rise in height and the 'head' with its underlying raised beach disappear. The Cornwall Geoconservation Group (CGG) has been monitoring this area of Prisk Cove over the last 10 years, because there is a lamprophyre dyke within the slates here, designated a County Geology Site (CGS). These lamprophyres are highly unusual rocks originating in the earth's mantle and play an important part in unravelling Cornwall's geological history. They were intruded as molten rock into the strata above after the main folding of the slates and predate the granites of the Constantine and Helston areas.

Up to 2004, the lamprophyre was barely visible from the sea. However by 2005 a landslide immediately to its south had developed, making it much more obvious to boats approaching the Helford. In the summer the evening sun turns the lamprophyre into a striking reddish brown colour, clearly visible from the sea. This winter another landslide to the north has developed (Fig), fortunately not affecting the lamprophyre. However it is quite obvious that between Parson's Beach and the County Geology Site (CGS) coastal erosion is actively attacking the rocks in the cliff and not just the 'head'. The strata in this coastal sector are tilted steeply seawards, so that when marine erosion undermines their base, they collapse and slide down into the sea. This process has been going on for at least 5000 years since the rising sea level after the last glaciation invaded this area. Locally the rocks have resisted the waves and now form sea stacks such as the iconic Shag Rock (Fig). The intertidal zone here is actively being created and increasing year by year, not just occupying a former wave cut platform as farther north.

Peter Ealey



Shag Rock - a sea stack isolated by wave erosion during the Postglacial rise in sea level. Note the numerous boulders created by cliff failures in the area

Tremayne Quay Restoration Appeal

Tremayne Quay on the Helford River is in need of some urgent restoration works. We need your help to raise the funds needed to undertake these essential repairs. Read on to find out more.

Tremayne Woods, the Quay and boathouse are well known to most people who are familiar with the Helford River, but for those who've not had the pleasure of visiting this very special place, here's a little background together with an appeal for help.

Historically, Tremayne has always been associated with Trelowarren Estate. Whilst there has no doubt been a quay located here for a great deal longer, the present structure dates from 1847, built by Sir Richard Vyvyan in preparation for a visit by Queen Victoria. Whilst unfortunately the queen never came, her great grandson, Edward, Duke of Windsor, favoured the quay with a belated royal visit in 1921 when he was Prince of Wales.



The Quay is at the end of a mile long track leading through unspoilt ancient semi-natural and plantation woodland running alongside the Helford River. Some of these woods, notably the mature beech plantation in the valley at the head of the Creek, were planted specifically to impress Queen Victoria prior to her aborted visit in the 1840s. The sessile oak woodlands further down the track were managed as coppice for the charcoal and tannin trade, and like many Cornish oak woodlands, would have been a hive of activity up until the 1920s with bodgers and wood folk managing the woods. Today, the woods are better known for their beauty and tranquillity as well as the abundance of estuarine birds and woodland flora which can be spotted along the way.

The Woods and Quay were bequeathed to the National Trust in 1978 from the Vyvyan family of Trelowarren. Today, it is one of the few public quays on the upper reaches of the river, with public access right down to the riverside.

These days, Tremayne is a popular place for recreation, quiet enjoyment and having fun. Whether it's walkers stopping for a picnic or just to enjoy the unspoilt

views up and down the river, boat users pulling up for a BBQ or overnight stay, or a bunch of youngsters experiencing the wonderful solitude of the river at night with a camping trip, most locals and visitors to Tremayne have fond memories of the place. It's a place to fish, catch crabs, wild swim, jump in at high tide, make a mud pie and roast marshmallows around the campfire. It's a place for everyone, for ever.

However, in recent years the Quay has begun to show its age and needs some significant restoration repairs undertaken. Holes have appeared within the walls, stones have become dislodged and in places the core of the structure is beginning to be washed out. We'd also like to make some improvements to the Quay, with some new boat tie-ups installed, improved fire pits and better drainage.

The National Trust has recently received a very generous donation of £3000 from a local charitable trust, but we still need at least £9000 more before the work can take place.

We know that Tremayne is a much loved and appreciated place and we would be enormously grateful for any contributions towards the repair costs. A gift of any size would be gratefully welcomed and will make a huge difference to this stunning local landmark for years to come.

If you would like to make a donation to this appeal then you can do so at www.justgiving.com/TremayneQuay or send a cheque made payable to 'National Trust' to Tremayne Quay Appeal, The Stables, Penrose Estate, Helston, Cornwall, TR13 0RD. Please indicate whether or not you would like us to claim gift aid on your donation.

You can also contact me for more information on 01326 291174.

Yours gratefully

Justin Whitehouse
(National Trust Head Ranger; The Lizard)



Coordinator Introduction

I was looking back at the past newsletters and in recent times there has been quite a turnaround in Coordinators. At the risk of boring you all here is another one!

Some of you will know me already from my work at the Environmental Record Centre for Cornwall and the Isles of Scilly, also a coordinator post. There I work on the Wildlife Information Service dispensing advice on all matters to do with Cornish wildlife and habitat and organising workshops. I am so very pleased to take on the Coordinator post for the HVMCA, taking me into the marine environment

and giving me the opportunity to help conserve this fabulous river close to where I have lived and raised my family for the past 22 years.

These are exciting times for the HMCG, there is such a focus on Marine Conservation, nationally and internationally and it is important that we join in the debate where it affects the Helford and the people that work, live and play around it. I look forward to meeting you all in due course at Events and out an about around the Helford.

Sue Scott

Supporting Business Profile: Trebah Garden Trust

There has been a close relationship between Trebah Garden Trust and HMCG for many years. The Trust has regularly provided financial and in-kind support for our activities. For example, on April 20th, David Chapman is taking a small group of HMCG members on a photographic tour of the garden, (details can be found in our events' leaflet). Records of Trebah date back to the Doomsday survey of 1085, when it was the property of the Bishop of Exeter. For six centuries it passed by sale or marriage through many old, noteworthy Cornish families, including the Killigrews and the Nicholls. The surviving Georgian house at the head of the valley was built by the Nicholls in the 18th century and pre-dates the garden.

Charles Fox acquired the property in 1838 and embarked on the construction of a 26 acre sub-tropical garden. Trebah is now especially famous for its camellias, magnolias and rhododendrons, some of which are well over 100 years old. Trebah is rated one of the 80 finest gardens in the world!

During the Second World War a regiment of 7,500 men of the 29 US Infantry Division with their tanks, guns and transport embarked from Trebah Beach in ten 150-foot flat-bottomed landing craft. For five days they battled through enormous seas to the Isle of Wight and then on to the D-Day assault landing on Omaha Beach in Normandy, where they suffered grievous casualties. A memorial at the bottom of the garden commemorates the courage of these brave young American soldiers.

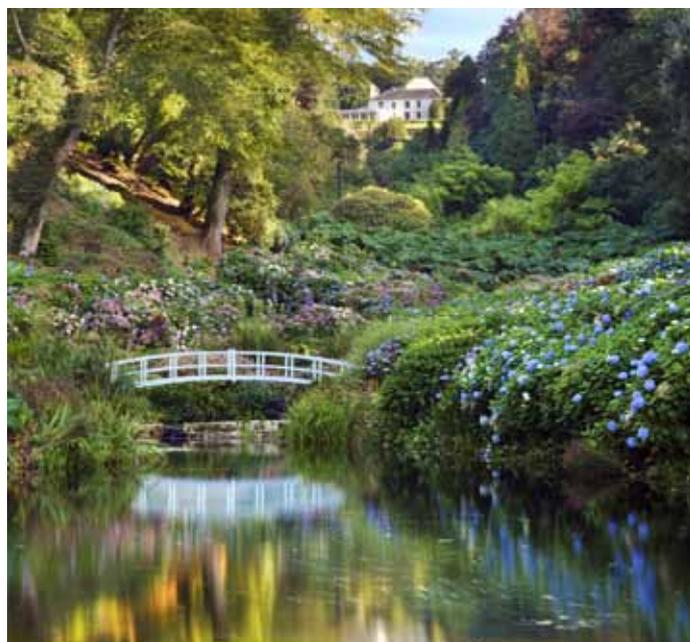
In the 1960s, Trebah was owned by the famous Cornish-born car designer, Donald Healey, and the beach café is dedicated to him. Major Tony Hibbert and his late wife Eira Hibbert bought Trebah in 1981 as their retirement home but were persuaded by the Cornwall Garden Society to begin a programme of work to restore the garden to its heyday. Under their

care the garden was vastly improved and opened to the public.

In 1990 ownership passed to an independent registered charity, Trebah Garden Trust, with trustees who oversee the management of Trebah. Their key objective is to preserve, enhance and recreate the garden for the benefit of the public. Since then Trebah has achieved many accolades and awards including the prestigious South West Tourism Excellence award for "Large Visitor Attraction of the Year 2011/12".

Trebah is open every day of the year from 10am and the Planters Café is also open 7 days a week. In recent years Trebah has become a highly-rated Cornish venue for weddings and this year introduced facilities to conduct intimate Civil Ceremonies and exclusive parties in the ground floor of The House.

Charles Richardson



HMCG Annual Report 2013

It has been a mixed sort of year, the sad loss our founder members Leslie Collins, Councillor Pam Lyne, Councillor William Rickard and Dr Kaspar Hocking, also a founder member of the Cornwall Wildlife Trust. With changes to the advisory group including Dr Charli Marshall leaving the post as HMCG coordinator, first for maternity leave and then to take up a job with Natural England, Holly Latham very ably stepped in briefly to cover her post for the period of maternity leave. Thank you both to Charli and Holly for seamlessly taking over the reins of the coordinator post and leaving it in very good shape for our new coordinator, Sue Scott. Sue lives locally and also works part time for Cornwall Wildlife Trust and the Environmental Record Centre for Cornwall and the Isles of Scilly as a Wildlife Information Service Officer. We have also recruited to new additions to the Advisory Group, Angie Gall and Dr Paul Gainey have joined us as scientific advisors. They will provide invaluable guidance for surveying and monitoring work in the Helford.

The Advisory Group continues to meet on a quarterly basis, main discussion points over the past year have been the Dredging of Falmouth Harbour and the impact it may have on the Helford. Opposition has been gaining momentum within the community, objection now coming from three angles. The cost to the taxpayer, Cornwall Council being reported to be willing to contribute 23 million pounds to the project, the whole project reported to be costing in excess of 60 million pounds. The environmental cost of the damage to the seabed in the harbour including areas of Maerl. Thirdly the plan to dump the dredged material out in Falmouth Bay, 1 million tonnes on quality fishing grounds.

Concern has been raised over the speed of dumping and the small area they are piling it on, the impact of the inevitable overspill and dispersal into the Bay and the impact upon the livelihoods of the local fishermen not to mention the environmental damage. The Group will continue to keep abreast of the situation in relation to any knock on effects it may have in the Helford. The illegal commercial gathering of Cockles and Razor shells still poses a problem within the Helford as well as gillnetting. The Advisory Group meetings provides a forum where these issues can be discussed with all interested parties from around the Helford, including Cornwall Inshore Fisheries & Conservation Authority, any evidence of illegal fishing activity be reported to Cornwall Inshore Fisheries & Conservation Authority - Simon Cadman on 01736 336842.

Concern was raised over the nutrient enrichment of the Helford from runoff from the surrounding land exacerbated no doubt by exceptionally high rainfall. This is being monitored by the Environment Agency

and they were on the Helford last summer mapping the extent of the Green Algae and hopefully they will continue to monitor.

The Group has been approached by Falmouth Marine School offering to provide regular help with the Bass monitoring project. This is very welcome to the project it is a sterling effort each year to get around all the sites, even more so this year being hampered by the poor weather and the loss of a boat.

Sadly the Group have been unable so far to resurrect the Helford river patrol boat, we will continue to be alert to ways of reinstating this in the future.

On an optimistic note however the ROV surveys conducted last year resulted in the confirmation of the discovery of a substantial Maerl bed, in the Helford. The report can be downloaded from our website and thanks to all who aided and abetted this discovery including Plymouth University and Sea Search. The Cornwall Wildlife Trust's Your Shore project has finished and Marine conservation is supported in part by a new project that will continue the work to engage with the community and encourage interest in the conservation of our marine environment here in Cornwall. Look out for the PANACHE project - Protected Area Network Across the Channel Ecosystem- the Advisory Group will continue to work with Cornwall Wildlife Trust making the most in shared training opportunities and networking.

The Group continue to look at planning proposals that may affect the River and scrutinise closely and comment upon any that may cause habitat loss, damage and affect water quality.

In a year when the Common Fisheries Policy is being renewed and the first round of MCZ 's have been designated never has there been more focus and publicity over our fish stocks and fishing. In all the confusion over what fish we should eat and where it should from it is time to support our local fisherman as much as we can. Buy local fish, fresh and delicious, you are supporting our small boat inshore fishing industry, our most sustainable option by far.

David Muirhead
Advisory Group Chairman

HMCG Members Committee, Chairman's Report Spring 2013

2012 saw another year of events and activities, successfully carried out and well supported. Many thanks to Paul Garrard for his hard work in organising, not just 2012, but also for the many previous years when he was in charge of the programme. The New Year 2013 has begun in the same way, under Charles Richardson, having 2 excellent events taken place already from the full year's programme. Also many thanks to the sub committee who supported Paul and now Charles.

We hope you find lots of interest in the remaining events.

Conservation Cruise 22 June: May I begin with a huge thank you to Moyana Berryman and Enterprise Boats for providing a boat for the Conservation Cruise for the many years that we have put on the cruise and for always keeping her prices as low as possible for us!



Moyanna has now retired but fortunately we can use the same boat this year through Cornwall Ferries. Please book early to avoid disappointment! So far, we are pleased to say that it has always been fully booked, with a waiting list. By anticipating a full boat we have been able to hold the price.

The AGM is 30th March and we do hope you can make it. Our speaker is Paul Naylor and I can guarantee will be fascinating. He is a marine biologist and has superb photos and commentary about our own marine wildlife.

Last year we marked the 10th anniversary of HMCG Members Group and celebrated it with a **Beach BBQ and snorkel safari**. The BBQ was popular (fully booked) and is also scheduled this year as an event on 14th September together with the snorkeling. You might like to put this in your diary and book it as numbers are limited.

This year we celebrate 25 years since the formation of the Helford Voluntary Marine Conservation Area (HVMCA) and the formation of the Advisory Group whose task is to discuss issues that affect the area. There is more information about this elsewhere in this Newsletter.

We thought it appropriate to mark this anniversary by introducing a new design for our **Information Boards** that are mounted around the Helford. You may recall that we have been working on this for some time and Charles Richardson has taken the lead on the project. The AGM will see the new design presented publicly for the first time.

Committee News: there are several changes taking place and new members to introduce at the AGM. As mentioned during the year, we are sorry that Martin Rule has stepped down as secretary after many years and are grateful for all he has done for us. We are all very sorry to lose his experience and valued input. However, Martin may have stepped off the committee but he is still actively supporting us both in general and also with our wetlands bird surveys, coordinating the team of volunteers. This means that we have a **vacancy for the role of secretary**, which is not at all arduous (honest!)

and we would appreciate hearing from anyone who might like to discuss it.

Congratulations to Rhiannon Pipkin who announced the wonderful news of her pregnancy a couple of months ago. This and her work commitments mean that she feels unable to give the committee the time she wishes. I can't thank her enough for all she has done over the last few years and of course look forward to the arrival of a new HMCG member before too long.

I am also sorry to announce that Ian Jakeways has decided to step down as treasurer and membership secretary with effect from the AGM. He has done a great job in this role and also as an active, effective committee member. As is the case with the others Ian will be missed.

I am delighted however that we have some new volunteers to help on the committee:

Jessica Hirons joined at the last AGM and has since taken on several challenges, one of which is the role of membership secretary in addition to her volunteer activities (see below). We also have Elizabeth West, Paula Evans (taking on the role of publicity from Rhiannon) and Tony Sutton who has volunteered to take on the Treasurer role. Many, many thanks all round to both new and long servers, joiners and leavers as without them nothing could happen.

We welcome anyone who would like to take an active role in the committee and would appreciate it if you would contact any of us to talk about it. Many hands and all that.

New coordinator: as you are aware we have been recruiting for a new coordinator and I am delighted to confirm that Sue Scott has taken on the role and we welcome her on board. Sue also works part time for Cornwall Wildlife Trust, as a Wildlife Information Service officer based in the Environmental Record Centre for Cornwall and the Isles of Scilly. This fits well with this role for HMCG. Sue lives locally and has a passion for the Helford. More details elsewhere in this newsletter.

The **Your Shore project**, funded by the National Lottery and run by CWT, is just coming to an end, having been active for three years working with all 5 VMCA's in Cornwall. We are hugely grateful to Abby Crosby and Matt Slater for their superb work including activities with schools as well as with teams of volunteers. We could not have done this without their support. Many children from our local schools have been able to get hands on appreciation of our beautiful river as a result.

As mentioned in our previous Newsletter, one of our challenges is to find ways to continue the excellent things that Your Shore has achieved. It is good to report that Jessica Hirons, committee member, has taken on the challenge of coordinating the volunteer activities. She has

been organizing the beach cleaning activities for some months now, including our first kayak beach cleaning expedition. This proved to be highly successful and will no doubt be repeated. A full report is included in this newsletter. Well done and thanks to all involved and in particular to Jes.

Our next challenge is to continue the education work. We believe that involving the next generation in the 'River' is a high priority, not just because our local kids should enjoy it but also in terms of helping to protect the long term future of the Helford. For this reason, recently, the committee decided to spend some of our funds to support the position of Wild Lizard Education Ranger, in partnership with the National Trust and Natural England. The post has been organised by the National Trust as a way to work with the local schools on The Lizard and around the Helford. This is just for one year to fill a gap, after which it is hoped that the post will be ongoing. In this way we aim to continue the legacy of the Your Shore project.

Marine Conservation Zones (MCZs): this is an important time in the process of the creation of protected marine areas. We reported previously to you that 127 areas around England had been put forward as recommendations for MCZ status. This follows at least 2 years of research work and consultations as well as much public money having been spent to provide the scientific evidence needed to support the recommendations. It was disappointing that only 31 have now come back from the minister for the final stage of public consultation. But it is hoped that this is only the first stage and others will be put forward in future.

The government says it is committed to protecting our marine environment.

You may have seen Hugh Fearnley-Whittingstall's demonstration in Westminster in support of the full network of MCZs. This is everyone's opportunity to have an influence by responding to the public consultation and hopefully supporting them. Further details elsewhere in this newsletter giving details of how, when and where to respond. The consultation closes at the end of March.

Finances: figures will be available at the AGM with the treasurer's report but I am pleased to say the finances look healthy at this time. The funding for our coordinator is in place until Sept this year and more or less accounts for the balance in the Advisory Group's accounts. Hopefully by then we shall have new funds to enable the post to continue.

Our Members Group funds are also healthy right now. We are committing some to the education activities for one year as stated previously and the new display boards could also take up some of the reserves. Our hope, however is to get sponsorship from businesses around the Helford and indeed we have some verbal commitment already.

May I thank all our members, volunteers, sponsors and partner organisations and anyone who helps in any way for their valuable support.

Best wishes
David Thomson

Winners Capture the Beauty of the Helford

The varied beauty of the Helford was captured in photographs entered in the annual competition run by the Helford Marine Conservation group with images above and below water, and on the shore.

Over 60 entries competed for places in the four categories which were judged by Tony Sutton, well known marine and natural history photographer and lecturer at Falmouth University. With his interest in underwater photography it was appropriate that the winners in each category received a signed copy of Great British Marine Animals by Paul Naylor. All winners received a certificate designed by Rhiannon Pipkin, competition organiser.

Rhiannon commented: "The photographs were all of an

exceptionally high standard and it was great to see the different ways in which local people captured the feel of the area".

This is the second year the highly successful competition has been held and entries were invited from photographers throughout the area. Images could be in colour or black and white but had to focus on the Helford area.

Certificates and prizes were presented at Gweek Village Hall following a talk by Duncan Pirrie on Cornish Estuarine Sediments.

The winners in each of the categories were:

Natural History – 1. Richard Morton with his close up of a sea anemone, 2. Tessa Thomson's Laminaria Island, and 3. Richard

Morton and his study of a wrasse. **Seasons** – 1. Peter Batson chose Gillan Creek as his subject matter, 2. Dave Thomson, and his seasonal view of the Helford, and 3. Peter Batson's harvested field.

Communities – 1. Tessa Thomson and her photograph entitled Starters' Orders, a portrait of man and dog starting the Jubilee Regatta at Polweveral Creek. 2. Jenna Oakes with selling cakes at the Jubilee Fair at Boskenwyn School, and 3. Pamela Tompsett. Look what I've found – featuring a youngster on the Helford Cruise and a tank of crabs.

Children (under the age of 14) – 1. Jim Lee with his image of a boat reflecting in pure blue water, 2. Kieran Roberts and his working river image, and 3. Jim Lee with a further portrait of a boat on the Helford.

Paula Evans



Settlement panel colonised by Creeping sea squirt and Orange tipped sea squirt. Photo by John Bishop

Marine Science Project Update

Regular readers will be aware of the Marine science Project , an initiative coordinated by the Environmental Records Centre for Cornwall and the Isles of Scilly, aimed at preventing the spread of invasive non-native species. The project continues to raise awareness and develop a dedicated network of citizen scientists on the look-out for new arrivals. Participants have been deploying settlement panels and taking part in survey and monitoring.

Met with raised eyebrows from onlookers, I've spent many an hour this winter huddled over riser chains and granite blocks fending off Gulls for the rich pickings that have settled - all in the name of science. Odd as it may sound, the chance to scrutinise submerged structures whether it be mooring equipment or boat hulls as they are lifted from the water, provide excellent opportunities to check for new arrivals amongst the diverse fouling communities that build up over time.

This increased vigilance has led to the detection of two previously unrecorded species here in Cornwall - the Red Ripple Bryozoan (*Watersipora subtorquata*) and a tunicate *Perophora japonica*, the latter being found last September in the mouth of the Helford River by visiting divers from the Porcupine Natural History Society.

However, it's not the first time that *Perophora japonica* has featured in the Helford VMCA Newsletter! Back in 2004 Pamela Tompsett appealed for sightings of this clump forming ascidian on behalf of John Bishop from the Marine Biological Association (MBA). At that time no common name had been assigned but more recently it is referred to as the Creeping sea squirt; a reference to the root-like stolons connecting the colony of individuals. I had my first glimpse of it earlier in the summer when the MBA brought along exhibits yet to be detected in Cornwall for participants enrolled on ERCCIS' Non-native species identification workshop to examine.

This small tunicate attaches to solid surfaces in harbours and marinas but also on other animals and seaweed. Unlike the similar native species *Perophora listeri*, individuals of the Creeping sea squirt colonies have a green/yellowish tinge and a shorter stalk connecting them to the stolon. A diagnostic feature in the summer and autumn months are star shaped bright, yellow terminal buds at the end of the stolons- memorably likened to little yellow acrobats!

This newly detected sea squirt joins the likes of the Leathery sea squirt (*styela clava*), and the Orange-tipped sea squirt (*Corella eumyota*) taking up residence in the Helford. We hope to carry out survey work this year to determine population and distribution.

If you would like to help further our knowledge of non-native species by taking part in the Marine Science Project, then please do get in touch especially if you would like to deploy a settlement panel on a non-tidal mooring (we have been revising the construction of the panels for swing moorings , having lost a few last year!) In June we will be running another non-native species identification workshop with experts from the MBA for those taking part or interested in recording non-native species.

One final plea! If you are planning to remove a structure from the water please get in contact, I may be able to come along and take a look at what's growing – you may have a new arrival! Otherwise you could help by taking photographs and emailing them to me.

Thank you for your continued support

Lisa Rennocks
Marine Science Project Coordinator
lisa.rennocks@cornwallwildlifetrust.org.uk

Cornish Estuarine Sediments: Human Impact versus Natural Processes

The remains of engine houses, those iconic features of the Cornish landscape, are an easily recognised and constant reminder of the importance of historic mining in Cornwall, but even they do not adequately reflect the magnitude of that activity. A photograph of Camborne-Redruth from the 1890s gave a memorable and better picture – numberless mine buildings and smoking chimneys packed in close proximity on ground barren of vegetation. The reason is geological: Cornwall is a world-class orefield, a polymetallic province, with minerals such as cassiterite, chalcopyrite and sphalerite, carrying metals such as tin, copper, zinc, tungsten, arsenic and gold, occurring as veins and impregnations associated with the granites that make up the county's moors and tors.

The soils are naturally rich in metals. Indeed it is sometimes difficult to decide whether a sample is actually 'contaminated' or simply at normal background level. Undeniably, however, there are areas that are truly contaminated. This matter comes to the fore when considering the water quality requirements of the Water Framework Directive, since it has been estimated that 8% of WFD failures result from past metal mining. A widely held view is that a major problem is the release of metals in acid mine waters, as occurred some years ago when Wheal Jane discharged into the Fal. However, the feared ecological 'disaster' here didn't happen because the fauna and flora were already metal-tolerant.

Cornish estuaries are rias, river valleys drowned over the last 16,000 years as sea level rose after the melting and retreat of the last ice sheets. But paradoxically, in historic times, the navigable limit has moved progressively seaward, not farther inland. The reason is that sediment has been supplied to the valleys faster than sea level has been rising. The sediment comes from mining activity. Tin streaming from the Bronze Age onwards gave rise to large volumes of fine-grained sediments, remaining after the black tin oxide cassiterite had been removed. Hard rock mining, starting in the 13th century and peaking in the late 1800s, produced a different type of sediment. The mines and mineral processing plants crushed the ore to a fine size to extract the wanted minerals, discharging the tailings as waste into the nearest valley. These tailings contain minerals that were too small for profitable extraction at the time. Duncan said that such valleys could, in effect, be regarded as 'unlined, unmanaged tailings dams'.

Many Cornish estuaries, including the Fal, Helford, Fowey, Hayle and Camel, have been studied by Duncan and co-workers to investigate the metal content of their sediments, some of which rank amongst the most contaminated in the world. About 150 shallow cores, reaching a depth of 1 metre, gave around 2000 samples, which were analysed for their mineralogy, geochemistry

and isotopes and plotted as vertical profiles. The results were dramatic. At a depth of about 45cm below the sediment surface, corresponding to the peak mining period 1860-1890, values for copper, zinc, tin and arsenic soared to a pronounced spike. Above that, as mining declined, the values dropped, but never regained the low, pre-1860, background levels. In some cases the spike coincided with a sharp change from pale estuarine sediments below to dark contaminated silt above. In other instances the upper sediments were of intermediate colour, mixed by stream processes and churning by burrowing animals. Each Cornish estuary is distinctive, depending on the mining in its hinterland. Some have china clay waste. The Fowey is dominated by tin, from medieval streaming. The Gannel has lead, zinc and silver. Arsenic reaches high values in the uppermost centimetres of the upper Fal. Metal contents can go as high as 70,000ppm tin, 29,000ppm copper, 8,000ppm arsenic. (10,000ppm – parts per million – equates with 1%). The Helford is the cleanest of the estuaries, reflecting the relatively low number of mines in its catchment, but nevertheless it has higher values than expected, suggesting that some ores had been brought in.

Does it matter? What can be done about it? A stable mineral such as cassiterite, tin oxide, poses no problem. Sulphides of copper, iron and zinc, on the other hand, are unstable in the presence of oxygen and readily oxidise, the metals leaching into pore waters where they disperse and can react to produce a variety of secondary minerals, such as carbonates. Provided that unstable minerals remain below the water table the best policy is to leave them undisturbed, allowing natural processes to effect self-remediation and the fauna and flora to acquire metal tolerance. Engineering solutions can be found for confined ('point source') contamination, but it is almost impossible to deal with 'diffuse' contamination, other than by its total excavation and removal.

Duncan cited three case studies. At Ryan's Field, the RSPB reserve at Hayle, the Environment Agency funded the digging of extra ponds for waterfowl. Unfortunately mining records had not been consulted, for the digging was on the site of a former tailings pond. The piled up waste began to oxidise and leach, some samples assaying up to 30,000ppm in both copper and zinc. A possible, though expensive, remediation method could involve mixing the waste with montmorillonite, a swelling clay (used in cat litter) which has the ability to adsorb and capture metal ions. Among other examples of point source contamination are the sites of former arsenic calciners, some 83 in Southwest England, where ores were roasted to remove arsenic and recover it as a by-product for pesticide use. The flue gases were passed through a labyrinth of stone or brick tunnels, leaving the sublimated arsenic oxide as

a white coating on the walls to be scraped off and put in barrels for export. Impregnated walls continue today to produce arsenical coatings. In West Cornwall a farmer's cattle began dying from arsenic poisoning even though his fields had been declared clear. The animals had escaped onto a nearby trackway and started licking a white substance which was found to contain up to 23% arsenic oxide. It had presumably fallen off carts coming from a calciner and was still lethal over 100 years later. A similar fate appears to have befallen Elmo, a Boston Terrier, whose great joy, before his death from liver and kidney failure, was running along the arsenic flue at Wheal Coates.

A barrage of questions and comments ensued, a measure of the audience's involvement. To summarise:

the spillage from Wheal Jane caused no significant damage: although worm tubes contained metals, the worms didn't. Kaolin could replace montmorillonite in some cases of remediation. Dredging of Falmouth Harbour might not produce a large environmental impact from the sediments since they had already been disturbed during earlier dredging. Reprocessing of sediments containing very fine mineral grains was technically possible but uneconomic. The feasibility of redredging the North Coast was being studied.

The HMCG would like to thank Duncan very much for his excellent, totally absorbing and informative talk.

Paul Garrard

Marine Conservation Zones-What can we do?

The Marine and Coastal Access Act 2009 (Part 5) enabled Ministers to designate and protect Marine Conservation Zones (MCZs). These are a type of marine protected area, which will exist alongside European marine sites (Special Areas of Conservation (SACs) and Special Protected Areas (SPAs)), SSSIs and Ramsar sites to form an ecologically coherent network of marine protected areas.

MCZs will protect areas covering the habitats and species which exist in our seas. They will be both large enough, and close enough together, to support functioning communities of marine wildlife. They will be used to protect areas that are important to conserve the diversity of nationally rare, threatened and representative habitats and species. Unlike other marine protected areas, MCZs will also take social and economic factors into account when identifying potential sites, alongside the best available scientific evidence.

So far so good, there have been 127 sites put forward by all the interested parties but in December 2012 ministers proposed that only 31 of these be designated and go forward to the round of public consultation. DEFRA says that these were the sites that had the most evidence of needing protection. In Cornwall 5 sites out of the 13 proposed have been proposed for designation. This is a very disappointing result for Marine Conservation. The

remaining sites (apart from 3 that were refused) may be considered in the future but there is no timescale. The public consultation period for the first 31 sites will be over at midnight on the 31st March 2013. If you would like to respond to this then MCZ team, c/o Post Room, Nobel House, 17 Smith Square, London, SW1P 3JR or by email: mcz@defra.gsi.gov.uk. You can find support on how to respond via the CWT web pages www.cornwallwildlifetrust.org.uk/mczs

There are still 93 sites left; most are deficient of the kind of evidence that will convince ministers that they need to be protected. Robust Scientific data in the marine environment has been difficult to come by but technology moves on and now we have means of mapping marine habitat accurately. Support the organisations that actively go out to gather this evidence, the Marine Biological Association, the Wildlife Trusts, Seasearch and your local VMCA to name a few. Get involved in recording marine life and send your records to the Environmental Record Centre for Cornwall and the Isles of Scilly. Write to your MP and Minister for the Environment to keep the MCZ's at the top of the agenda. More Information on MCZ's including a map of all the sites can be found at www.wildlifetrusts.org/MCZfriends

Sue Scott



Event Profile-Goongillings Fungus Foray 21st October 2012

It was a fair afternoon in October last year that we gathered in the yard at Goongillings for a Fungus foray with local fungi recorder Pauline Penna. A large group of us set off including several children and dogs to survey the first part of the foray, the back garden. Here we found the aptly named bright yellow Sulphur Tuft *Hypholoma fasciculare*, the fat creamy Plums and custard *Tricholomopsis rutilans* also Cramp balls *Daldinia concentrica* and Candle snuff *Xylaria hypoxylon*. Don't you just love these names?

We then walked down the lane towards Scott's Quay and found *Agaricus silvaticus*, this looks similar to a field mushroom but unlike the field mushroom stains reddish when touched and, as its name suggests is found in woodland or woodland remnants.

The beautiful and enormous Parasol mushroom *Macrolepiota procera* was next on the list finding a rich spot for fungi under the Blackthorn hedge including the bracket *Skeletocutis nivea*, *Clitocybe nebularis* (forming a ring through the hedgerow), Oyster mushroom *Pleurotus ostreatus* growing on gorse and last but not least the dainty white caps of *Crepidotus variabilis* growing on gorse.

When we went into the woods there were many sharp eyes finding things and Pauline was soon surrounded by enthusiastic finders clutching pieces of wood with fungi attached. Pauline explained that when finding fungi it is most important to note down what it is growing on as this is part of the identification process. This tested our tree identification skills too!

Many fungi do not have common names and some are so tiny and obscure they cannot be named in the field but have to be taken home further investigation. Confirmation for some species can only come from examining the size and shape of spores under a microscope.

Highlights for me were the beautiful purple Amethyst deceiver *Laccaria amethystina*, in one area scattered liberally amongst the leaf litter. Also the stunning Porcelain fungus *Oudemansiella mucida* away up in the branches of a Beech tree, shining in the sunlight. We also found, *Mycena pura*, *Gymnopilus junonius*, *Collybia dryophila*, *Bjerkandera adusta*, *Ochre brittlegill* *Russula ochroleuca*, *Russula atropurpurea*, *Mycena filopes*, *Mycena galericulata*, *Mycenella salicina*, Birch Polypore *Piptoporus betulinus*. *Cortinarius sanguineus*, *Mycena adscendens*, *Xerocomus chrysenteron*. Deadmen's fingers *Xylaria polymorpha*, and *Hypoxylon fragiforme*.

We walked back across a meadow and found Liberty caps *Psilocybe semilanceata*, *Verdigris agaric* *Stropharia aeruginosa* and lastly an *Inocybe* sp unfortunately without its stipe (stalk) so it could not be identified further.

Many thanks to Pauline for a very interesting afternoon out and to all who came along, their fungi finding skills really boosting the numbers of species recorded at Goongillings and not least thank you to Charles Pugh for letting us tramp across his land and for giving up his time to show us around his beautiful farm.

Sue Scott



Fungi foray. Photo by Yvonne Barlow

HELFDORD MAERL DISCOVERY

Talk By Angie Gall for Advisory Group

Angie gave us some background information about Maerl, a species of Red Seaweed. In Cornwall, Maerl beds can be made up of two species, either one or the other or both. These are **Phymatolithon calcareum**, **Lithothamion corallioides**. Maerl is a nationally important habitat and on the Biodiversity Action Plan can take 100-1000s of years to establish and has a very complex accreted 3D structure used as habitat for other Nationally Rare species.

There had been a 1987 survey in the Helford where Maerl was found, although described as just a small point, also anecdotally various divers had reported seeing some but no one was clear if it was a functional Maerl bed.

Last Summer a group of volunteers for HMCG used the Remotely Operated Underwater Vehicle (ROV) from Plymouth University lent for a day with pilot and Sea Search divers to take a closer look. Chris Bean kindly lent his boat for transport. They explored along lines (transects) up and down from the mouth to Helford Passage and were on the last transect opposite Trebah Garden when they discovered the Maerl. A GPS was maintained between boat and ROV to log the location

of the Maerl bed, usefully, they also mapped the other biotopes in the transects as they went along and Angie showed us the results drawn up on a map by the Environmental Record Centre of Cornwall and the Isles of Scilly. Also photos of healthy pink Maerl and the invertebrates living amongst it.

The Seasearch divers photographed extensive healthy coralline Maerl species different in character to the beds in the Fal. There were many unusual invertebrates and red seaweeds, rare species in rare habitat- the dense live Maerl was tangled and accreted indicating, it had been there a long time.

The Joint Nature Conservation Committee JNCC (statutory conservation advisors to the Government) have a dive team and they came and surveyed again with three days of diving. They declared the bed a very significant find, much healthier than the beds they usually see in other parts of the country. A big thank you very much to Angie for reporting on last summer's research, her report can be found to download on our website via the publications tab.

Sue Scott

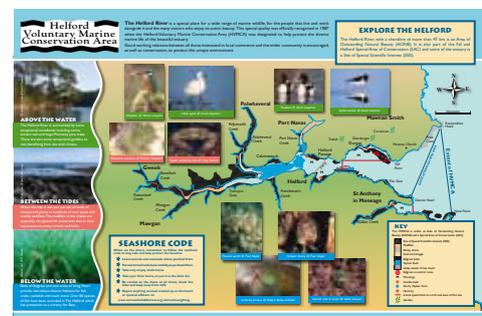
New HVMCA Display Boards around The Helford River

As part of the celebration of the 25th Anniversary Year for the HVMCA we are launching a new design for the display boards placed at key points around the river. There are currently a dozen of these boards and they have lasted over 10 years. The design of the old boards has been extensively used in our Events Leaflets and elsewhere over the last 10 years.

The Members Committee decided some time ago that it would be good to refresh the display boards, both to update the content and to try a new design to attract the attention of the public. However, this is an expensive exercise and we needed to ensure that we could afford the cost of around £3,000 including design, production and installation.

The main messages of the display boards are about the unique nature of the Helford area and the importance of its habitat, above the water, between the tides, and below the water. There is some key information concerning the status of the river such as AONB, SAC and SSSI and many useful points of interest along the 47km of shoreline.

We are grateful to Sarah McCartney from the design team at Cornwall Wildlife Trust for the vibrant new design. It was agreed at the outset that we would use a large map of the river as the central focus of the new



display boards together with plenty of photographs of important species from the area – with one important exception. We decided not to include a photo of Sea Bass to avoid unintentionally encouraging fishing for sea bass! And this is one of the first maps to highlight the newly discovered maerl beds on the Helford, to the south of Trebah.

We are confident that we will be able to get considerable financial support from sponsors for these new display boards. We already have offers of support from Budock Vean Hotel, Gweek Quay Boatyard and Trebah Garden Trust and we hope that most if not all of the new boards will be sponsored. We may also be able to put two or three boards in new locations if sponsorship is available.

I hope you like the new design!

Volunteer Profile-Jes Hiron

I would like to introduce myself as acting volunteer co-ordinator for the Helford VMCA. I have been on the group members committee for a little over a year now and as I get more involved my passion for engaging the community and working with keen volunteers has grown. With the imminent finish of the brilliant Your Shore Project run by Cornwall Wildlife Trust it is now our responsibility to continue the good work. I will be working alongside our coordinator, Sue Scott and provide valuable and varied opportunities for members of our local community and for students. We have worked together with the Wildlife Trust to create a packed volunteer calendar which offers something for everyone, from beach cleaning to biological shore surveys and training days.

My passion for all things marine stems from a childhood filled with sailing adventures on our family yacht which we sailed around the Mediterranean and later as far afield as Madeira and the Azores. As I grew up I became professional yacht crew, voyaging across the North Atlantic, working on a

variety of boats in the Caribbean and New England.

These days I am more focused on family life with my two young children, we enjoy living on the Lizard Peninsula where we spend much of our time on, in, under or next to our pristine Cornish seas. We have a little kayak which allows us to explore the Helford, sometimes stopping at the odd 'secret spot' for a picnic. I have recently completed a foundation degree in Marine Science at Falmouth Marine School where I have learned my about the dynamics of our coastal habitats and the marine life they support. As a Cornish woman I am also immensely proud of these unique, beautiful and ecologically important environments and would like to do what I can to better protect them.

If you feel the same or would simply like to learn more about the wonderful, underwater world of the Helford Estuary then please do get in touch to join if with some of the opportunities we have to offer.

Jes Hiron 

Upcoming Events

Saturday 30th March

The Helford VMCA's 25th Anniversary Celebration with Talk by Paul Naylor and AGM

Come and celebrate our 25th Anniversary with Intrigue and Colour in the Helford. The Helford Estuary and surrounding waters are home to a fabulous variety of animals. Marine biologist Paul Naylor will use underwater photographs to show some of the secrets of their lives.

Cost: £2. Members & children free.

Time:  7.30 p.m.

Venue: Gweek Village Hall, opposite the National Seal

 anctuary, TR12 6UG

OS Ref: SW 709 266

Contact: Ruth 07825070613 or Charles 07795845696

Saturday 20th April

Outdoor Photography at Trebah Garden

Join well known local photographer David Chapman for a rare opportunity to have some tutoring in outdoor photography in a walk around Trebah garden, taking in

landscapes, flowers and macro images.

Booking Required Max 10

Cost: £10 (includes Trebah Garden entry)

Time: 10.00 a.m. – 1.00 p.m.

Meet:  In the foyer at Trebah Garden Mawnan Smith
Falmouth TR11 5JZ

OS Ref: SW 769 275

Contact: Martin 07854123877 or Charles 07795845696

Sunday 12th May

Sand Sculpture

Seaweed Monsters and shelly sea creatures! Join Cornwall Wildlife Trust's marine officer Ruth Williams for a fun family event making beach art from the things we find on the seashore.

Cost: Free

Time: 1.00 p.m. – 3.00 p.m

Meet: Helford Village Carpark

OS Ref: SW 759 261

Contact: Ruth 07825070613 or Rhiannon 07710956734



Aim: To safeguard the marine life of the Helford River by any appropriate means within its status as a Voluntary Marine Conservation Area, to increase the diversity of its intertidal community and raise awareness of its marine interest and importance.

For further information relating to the Helford Voluntary Marine Conservation Area please contact

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