Main photo: Looking out to Whiddy Island, with Hungry Hill in the background.
Left inset: A view up Bantry Bay from the top of Bere Island.
Right inset: The southern coast of Dursey Island.

Photography © Robbie Murphy
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The publishing of our latest book The Wild Plants of Bere, Dursey, Whiddy and other Islands of Bantry Bay (see page 6) brings to fruition a project we began in 1997. That year, for a number of months, we hased three botanists on the islands of Bere, Dursey and Whiddy to record the wild plant life. It was like an Aladdin’s Cave, revealing a flora close in number to those we had found for the Roaringwater Bay islands. We knew further survey work had to be undertaken following a number of visits, ending in 2008, we had a total of 578 species, close to the 627 for Roaringwater Bay. Our next task was to publish the data, a huge task in itself. Fortunately Dr John Akeroyd who edited the Station’s first flora has been a major influence in guiding our botanists over the years. After much work, editing, checking, rechecking, etc., the second flora was finished and printed this May. I feel very proud of both floras. These two books show how special the islands off the southwest coast of Ireland are in the richness of their plant life. It makes them, for their size, unique in Ireland today. Even now I believe there is much more work to be done, which would see more species added to the lists of all the islands. It is hard to understand why the flora of these islands has never before been systematically recorded.
I had hoped that we could begin surveying the three peninsulas of West Cork – Berean, Sheep’s Head and Mizen – once the latest book was published. Unfortunately the financial cost would be too great as each peninsula would need a team of botanists for at least a 3-year period. It is hard to believe that a systematic study of the wild plant life of Cork County has never been undertaken. Since 1971, there have been only two recorders for the County – Tony O’Mahony and the late Maura Scannell, the latter based at the National Botanic Gardens, Glasnevin, Dublin. All the work Tony has undertaken has been done using his own resources. He has added so much to the flora of the county. Thankfully he was able to produce The Wildflowers of Cork City and County (The Collins Press, 2009) – a wealth of beautiful written, bringing the layperson on a journey with him through the flora of many areas in Cork city, such as Sunday’s Well, W. Luke’s, the Glen and Blackrock and in the County, from the coast to the lakes to the mountains. The chronic shortage of botanists means so much of the diversity of the wild plants are being lost forever. To do a systematic survey of the county would take many teams of botanists. Frighteningly, Tony O’Mahony is the last systematic botanist for the county. To quote his own words “when I go there is no resident Cork botanist to follow me”. Sadly he could be the last botanical surveyor in Cork County. I cannot understand the lack of interest in one of our most vital natural resources, our wild plants. We can save bats, dolphins, seals, whales and yet the flowers provide pollen and nectar for many insects such as bees, butterflies and moths, all vital in the foodchain for other animals and for humans.
Establishing the flora of an area is an important resource. Having a baseline record of native and non-native wild plants species helps to build a picture of the biological diversity of an area. It can serve to a tool to educate people about their local environment and help to monitor the presence of invasive plants species, which can sometimes have a negative impact on native species.
Tony in his book highlights the main areas of botanical biodiversity within Cork County. He lists eleven focal points that are worthy of conservation measures. These include:
* The southwest peninsula of Mizen,
* Sheep’s Head and Beara,
* The West Cork mountain range,
* Inland and coastal fenn, lakelet and marsh habitats of north Cork,
* Cork City and its environs - which boasts an inordinately rich and diverse flora.
* The conservation of small, widely scattered waterbodies.
* Roadside ditch habitats.
The last 30 years has seen thousands of miles of ancient roadside ditch habitats destroyed and replaced by concrete panels or posts as necessary road improvements have been made. These ancient roadside ditch habitats harboured a diverse, rich flora that was irreplaceable. In some cases, destruction of these hedgerows may have been unavoidable but surely with so much topsil available wonderful new ditches could have been established, either in front or behind that odious concrete. In a short space of time new habitats would have been formed for wildlife. What a legacy that would have been for future generations. Maybe someday someone in authority, whether he be in Ireland or Brussels will insist that if hedgerows have to be destroyed, new ones must be established.
At present Ireland’s roadside ditch habitats are “second class citizens” and looked on as a nuisance, not the crucial habitats on which much of our wildlife relies.
If we don’t look at what plant species are where, there will no true record of the plant species around us and many may be lost, simply through ignorance. Plants may not be the stars of conservation but they are a vital part of every ecosystem and we should at least record their presence.

SUBSCRIPTION FORM
SHERKIN COMMENT is an environmental publication of Sherkin Island Marine Station, aiming to promote the awareness of our natural resources, their use and protection.
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By Oscar Merne

IN 2002 I wrote an article in Sherkin Comment (Issue No 31) about the tern breeding colonies on artificial platforms (mooring dolphins) in Dublin Port, and described how the numbers breeding there increased from 34 pairs in 1994 to 200 pairs by 2001. This increase was due largely to improvements made to the platforms to make them a much safer breeding place, including covering the surface with shingle, fitting retaining walls to prevent eggs and chicks falling over the side, and providing shelters for the tern chicks to protect them from wet and windy weather.

Since 2001, the tern conservation project continued annually, with further improvements to the safety of the platforms (with thanks to Dublin Port and the ESB), and by June 2012 the numbers of terns breeding there had tripled to 600 pairs. Only the colony on Rockabill, 7 km off the north coast Dublin coast, has larger numbers — almost 2,000 pairs of Common Terns in 2012, plus 1,200 pairs of Roseate Terns. Things were looking good at the Dublin Port colonies, in spite of a lot of wet weather in May, June and July, with high average clutch sizes and good hatching rates. By mid-season almost 500 chicks had been ringed, and there were still many eggs to hatch and chicks that would be large enough to ring later. Then disaster struck! Brown Rats discovered the colony, and being good swimmers and climbers they were able to raid the platforms and run amok among the nests, killing all the chicks that had not yet fledged. I won’t go into the grim and gory details, but suffice to say that was the end of the colony for 2012.

On a positive note, many of the early chicks had fledged and thus escaped the mass slaughter, while all but one of the breeding adults escaped. They are long-lived birds (some surviving to 30 years or more), so they will be able to breed again. Furthermore, it is known from similar experiences elsewhere that terns will return to such routed colonies in subsequent years — providing the rat problem has been resolved. So, for 2013, plans are already being developed to prevent rats from wreaking havoc again on the Dublin Port colonies.

This episode raises the issue of the impact of introduced alien species on our native fauna and flora. Brown Rats are thought to have originated in eastern Asia and spread westwards by man along trade routes. They reached Britain and Ireland by the early 18th century and quickly became firmly established here. They are found throughout Ireland, including many offshore islands, and are now considered our most troublesome mammalian pests. From a bird conservation point of view their impact on colonial nesting seabirds can be particularly severe, sometimes permanently wiping out whole populations of species such as Manx Shearwaters, Storm Petrels and Puffins. Further afield rats have managed to populate the remotest of oceanic islands, usually transported there unintentionally by man, having “stowed away” on ships. Eradicating rats on islands which are vital for the conservation of unique threatened native species, is now seen as essential for the conservation of those species. But this requires an enormous amount of dedication, determination, hard work, difficult logistics and money. For example, the rat population which was introduced to the Antarctic island of South Georgia by 19th century whalers and sealers is now being targeted in order to stop the serious decline in the important colonies of albatrosses, shearwaters, petrels, penguins, and unique South Georgia Pipits and Pintail. This will be an enormous and costly task and it would have been much better had the rats not colonised the island in the first place.

Around the world there are thousands of examples where introduced alien animals and plants have caused enormous damage to the local ecology, fauna and flora, and also huge economic damage. Very often such introductions were accidental or unintentional, but, unfortunately many were deliberate. In New Zealand, for example, European settlers deliberately introduced species mentioned by Shakespeare and in the bible. Many of these introduced species have displaced unique native ones, which nowadays just survive on small offshore islands where the aliens have been eradicated or never reached. When I was in New Zealand a few years ago I discovered that c.80% of the entire annual budget of the state conservation body had to be devoted to dealing with harmful alien species — including 80,000,000 Australian possums!

Now, in the 21st century, it is recognised that the introduction of alien species of animals and plants can have disastrous ecological and economic repercussions, and such deliberate actions are generally illegal. In spite of this, deliberate and illegal introductions are still occurring. When will we ever learn?


Oscar J. Merne
Rest in Peace

By Matt Murphy, Editor

Sad to learn on 17th January 2013 after a long illness. We were so fortunate that Oscar wrote for Sherkin Comment, having written an article in every issue since No. 3. During the final months of his illness, Oscar said he would like to write some further articles to be published in future issues and we were thrilled that he did so. We were in awe of Oscar’s many achievements and his vast worldwide knowledge of birds. With his work and his many publications, he has left a great legacy. Oscar retired from the National Parks & Wildlife Service in January 2004. He worked as an ornithologist for this Service and its predecessors since 1968. He was responsible for establishing the Wexford Wildfowl Reserve on the North Slob in Wexford, one of Ireland’s most important wintering areas for waterfowl — especially the Greenland White-fronted Goose. After ten years he transferred to the NPWS Research Branch headquarters where he was given national and international responsibilities for bird research and conservation. One of his major achievements was the establishment of a network of 110 Special Protection Areas for birds, under the European Union’s Birds Directive. His main research interests were the status, distribution and ecology of breeding seabirds and migratory waterfowl. He has over 200 publications on these and other topics.
When did you take up journalism as a career?
I’d always thought it would be wonderful to be a journalist, but in fact I started my career as an Anglican priest (deacon, actually). After a year in an East London parish I realised it wasn’t for me and migrated slowly via magazines and a stint as a Reuters stringer in Burkina Faso, west Africa, to full-time journalism in the mid-1970s.

When did you join the BBC?
I found in 1978 that a friend worked for the BBC World Service. She arranged for me to take a test to do a three-month summer relief job in the newswoman, and I stayed in the BBC for 26 years.

Did you join as a religious correspondent?
No, as a sub-editor, a lowly form of life. The religious correspondent job was much later, in the late 1990s, just before I retired from broadcasting (though I went on with on-line reporting).

Was this a difficult brief with so many different religions, some with opposing views?
Not really. I got on well with most of the religious people I met, although almost every one was convinced that they possessed the ultimate truth and that it was my job to pass it on to the viewers and listeners (it wasn’t – my job was to cover religion when it made news, not when it was attracting little attention from non-religious people). The real problem was the editors, many of whom were interested mainly in tabloid stories about deviant clergy.

In 1987 you became the BBC Environment Correspondent. Was this your choice and if so why?
Yes, I wanted the job, and I just managed to get it, although I discovered that - as so often - the BBC had really wanted to attract a big name from Fleet Street. I was very happy being a general reporter, but when the environment job came up I went for it because I thought I was vital to every part of life. Did you always have an interest in the environment?
An interest, yes, but no detailed knowledge or understanding of it. I had a degree in theology, but no science qualifications at all.

How did you handle high-powered politicians and NGOs from the media?
By trying always to remember the journalist’s watchword – scepticism (which is very different from cynicism).

Did you find that the environment was a priority for governments?
Some governments, yes – mainly in Scandinavia and northern Europe. The much-derided European Union has done a huge amount to protect and improve the environment. And although the UK was known in the 1980s as the dirty man of Europe, it was starting to improve in many ways.

Do the public in general have an impact on protecting the environment?
I don’t think you can generalise about that. Some people are consistently set on caring for the environment; some lose interest if the economy is in poor shape. Because I think poverty is a key environmental threat, I understand why many people may feel it is a low priority.

What NGOs in the UK do you admire most?
Friends of the Earth are consistently modest and trustworthy. I also admire the Global Action Plan and Practical Action.

Ground slows glacier ice loss

New understanding of some of Greenland’s major glaciers suggests they may not melt in the future nearly as fast as they are doing now.

Lower loss expected

By building up a computer model of these four glaciers, scientists have revealed that the shape of the ground beneath the ice has a marked impact on the way the ice moves, with the rate at which the glaciers are losing ice depending critically on the shape of the fjords in which they sit and the topography of the rock below them.

In turn, this has led the scientists to doubt whether present rates of ice loss and the “calving” of icebergs from the glaciers will be maintained.

“Our models show that the shape of the fjords can reduce the rate at which icebergs calve,” says Dr Faezeh Nick, of the Universite Libre de Bruxelles, lead author of the study.

The key point is that we actually need to know about the land beneath the ice if we are going to come up with really good projections on future ice loss and the contribution to sea level rise of these glaciers. This computer modelling could be a big step forward and adds to our understanding of how glaciers behave.”

Kieran Cooke, Climate News Network – a free, ready-to-use factual service that brings you the latest news of climate change science. Website: www.climatenewsnetwork.org

A Lifetime of News

Matt Murphy, Editor of Sherkin Comment, speaks to Alex Kirby, a regular contributor to Sherkin Comment and a speaker at a number of Sherkin Island Marine Station conferences over the years.

SHERKIN COMMENT 2013 Issue No 55

Alex Kirby
Are the public complacent on the environment? What should they be responding to?
Some are complacent, but many care, even if they don’t know exactly what they should do. I think we could all get into the habit of thinking about the implications of what we do today for our children and grandchildren, that would probably spur us very quickly to try to live a lot more sustainably. That’s not an argument for a spartan, hair-shirt existence. It would be very different, but it needn’t be miserable or deprived.

In retirement from the BBC what are you working on now?
With three friends, all former national print or broadcast journalists, I’m running a website to provide good coverage of climate science to journalists and newsrooms worldwide. It’s free of charge, because we pay the costs ourselves – the Climate News Network, www.climatenewsnetwork.net
By Susan Callaghan

Ballycroy National Park is one of six national parks that are managed by the National Parks and Wildlife Service (NPWS) of the Dept. of Arts, Heritage and the Gaeltacht. It is part of the Owendiuff-Nephin Complex Special Area of Conservation (SAC) and Special Protection Area (SPA). These European designations make up the Natura 2000 Network, which protect rare and important habitats and species under the EU Habitats and Birds Directives. The Park covers an area of 11,000 hectares, the majority of which is remote and far from road access. A visitor centre is located in Ballycroy village which is on the N59 north of Mullumny. The centre is crucial for the visitor experience as the heart of the Park is remote and quite inaccessible to the day tripper. The centre’s interactive displays explain the importance of the habitats and species in the National Park and surrounding area and serve to remind us of the myriad of wonderful plants and creatures that inhabit these hills and bogs. Social and cultural history is explored, highlighting the inextricable link we have with our natural world. An education programme also serves to raise awareness of our natural environment – school, college groups, tourists and locals benefit from our natural history interpretation.

For the adventurous, the Bangor Trail provides a path into the heart of the Park. Meandering along the lower slopes of the Nephins it skirts along the edge of the Owendiuff bog - one of the largest intact active blanket bog systems in Western Europe. It is breathtaking here and you are rewarded with an experience of true peace and pure wilderness. This is an important habitat for Golden Plover, Red Grouse and an array of other moorland birds. The Owendiuff and Tarsaghaun rivers are important salmonid rivers – here you may be lucky enough to spot an otter journeying up river to the mosaic of bog pools in search of frogs, or hear the Common Sandpiper’s distinctive alarm-call. The rare Ivy leaved bellflower decorates the river edge with its delicate purple flower. Other plants brighten the landscape – bog asphodel, cross-leaved heath, and the enchanting bog bog asphodel, cross-leaved heath, and the enchanting bog. Social and cultural history is explored, highlighting the inextricable link we have with our natural world. An education programme also serves to raise awareness of our natural environment – school, college groups, tourists and locals benefit from our natural history interpretation.

This April, following a long spell of dry, cold weather, we were faced with a new challenge – over three days a devastating fire engulfed large tracts of blanket bog and heath – the first such fire here for 40 years. Around 5000 ha was burnt, with about 3000 ha of this in the National Park. As a consequence delicate lichens, mosses and liverworts that had taken years to establish themselves were wiped out in an instant. Many species were affected including frogs, lizards, and invertebrates such as beetles and spiders. For what should be a chorus of larks, pipits and other moorland birds, all you can hear this season is the crunch under foot as you walk. We wait with interest to monitor the recovery.

National Park lands so these grazing pressures were also experienced in the Park. Cooperation with the local farming community through grazing restrictions and reductions in sheep numbers has led to a marked improvement in the vegetation cover. This April, following a long spell of dry, cold weather, we were faced with a new challenge – over three days a devastating fire engulfed large tracts of blanket bog and heath. The Owendiuff and Tarsaghaun rivers are important salmonid rivers – here you may be lucky enough to spot an otter journeying up river to the mosaic of bog pools in search of frogs, or hear the Common Sandpiper’s distinctive alarm-call. The rare Ivy leaved bellflower decorates the river edge with its delicate purple flower. Other plants brighten the landscape – bog asphodel, cross-leaved heath, and the enchanting bog. Social and cultural history is explored, highlighting the inextricable link we have with our natural world. An education programme also serves to raise awareness of our natural environment – school, college groups, tourists and locals benefit from our natural history interpretation.

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The latest publication from Sherkin Island Marine Station is an illustrated account of the diversity of wild plants to be found on the islands of Bantry Bay. This long deep bay has a key place in Irish history; it is also a major centre for Irish plants. Here, in a natural harbour, of mild climate and dramatic scenery, the rocks, soils, wild plants, people and landscape have shaped one another since the Ice Age. The book not only examines trees, flowers and ferns but also, in the introductory sections, the scenery, geology, geography, human history and land use of Bantry Bay. This we hope will take the book to a wider audience, as a guidebook and souvenir of the area. At the same time the annotated catalogue of the plants should provide valuable data for botanists, geographers and other scientists.

We have worked hard to ensure that *The Wild Plants of Bere, Dursey, Whiddy and other Islands in Bantry Bay* is as detailed but yet as readable as *The Wild Plants of Sherkin, Cape Clear and Adjacent Islands of West Cork*, published in 1996, with a 2011 Supplement. Advances in desktop publishing technology, especially high resolution digital photography, have greatly facilitated the production of the Bantry Bay book relative to its predecessor, and we hope that Robbie Murphy’s evocative pictures of plants, scenery and old buildings will enhance the book’s appeal to a broad readership.

The islands are steeped in history, from the Irish resistance to Elizabeth I and Wolfe Tone’s abortive French invasion in 1796, to the early 20th century when Bere and adjacent Castletownbere were a base for the Royal Navy’s battleships and Whiddy a base for US seaplanes.

In the past botanists have largely neglected these biodiversity-rich islands, which have a total of 578 wild plants recorded, although the nearby Beara peninsula was long famous for plant rarities. Most of the records reported in the book were compiled from 1997 by botanists based at Sherkin Island Marine Station. However, Bantry Bay plant records go back over four centuries. Philip O’Sullivan Beare (1590–1636), who lived on Dursey as a boy in the 1590s, and later wrote *The Natural History of Ireland*, noted Betony (*Stachys officinalis*) and other medicinal plants, as well as crops and trees, from Bantry Bay and the islands. Richard Pococke (1704–65), Bishop of Ossory, explored Whiddy and Dursey, from where he accurately described the rare Crowberry (*Empetrum nigrum*) – the first confirmed plant record from Ireland.

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The rugged southern coast of Dursey.

A flowery meadow in May on Bere Island.

The Martello tower at Ardagh on Bere, with its extra defensive battery. Two towers survive on the island, two more were demolished in 1896.

Crossing from Castletownbere to Bere Island; (left to right) Jenna Poole, Marketa Janouchova, Dr John Akeroyd and Wendy Atkinson.
Part of the timber handrail caught in the shape of a crucifix after the knockdown.

**Capsize at 75° North**

By John Gore-Grimes

**SHARDANA** is a 31 foot Nicholson sloop and in July/August 1980 we sailed from Howth to the Shetlands and then on to Svalbard, reaching 80° North. We sailed from Svalbard to the small volcanic island named Jan Mayen and it was on that passage that the events, which are described below, occurred:

By two o’clock on the morning of Thursday the 21st of August, 1980 the barometer had risen to nine hundred and ninety-three millibars. It was still bright but overcast. Half an hour at the helm was enough and I had just come on watch to relieve Black Bob Fanin, who shouted on the handover:

“At these speeds we will be home before we know it.” He went below to sit at the chart table in an attempt to regenerate some body heat while sheltered from the wind chill.

I was just about to settle in and to clip on my safety harness when the boat suddenly fell from the top of a wave, and crashed downwards. It was as if someone had dropped Shardana from a two story building. My stomach came right up to the top of my head and then there was a sickening thud as the hull hit the water surface below. Within an instant the wave from which we had risen broke over the boat and turned her upside down. I thought of shouting but I was underwater, and my hands no longer held the helm. I reached up and for a second I touched the cockpit floor above me. Then it was gone and vivid, split-second pictures of my childhood: my first holy communion, my parents, my wife and children darted through my mind. The life jacket in my oilskins was partially inflated. I felt sure that I would come to my senses, my wife and children darted through my mind. The life jacket in my oilskins was partially inflated. I felt sure that I would come to my senses, but I knew it. He went below to sit at the chart table and had somehow ended up seated on top of the gas cooker on the opposite side of the cabin. If the situation had not been so serious we might have found time to laugh. Black Bob looked a little dazed on the top of the cooker, sitting there claspings the sodden pages of his book. The heavy ship’s batteries, which had been underneath him as he sat at the chart table, joined him in his flight across the cabin roof. Somehow the batteries had missed him as they fell to the cabin floor beneath the gas cooker. Everybody had been immersed in cold sea water with the exception of Grey Bob (Black Bob’s father), who had been asleep in the forward section of the boat. Hitting the roof had not been a new experience for this hardy mariner. Grey Bob had been bounced off his bunk many times in his dreams, and for him the capsize was little more than a mild inconvenience which had disturbed this usually heavy sleeper’s nocturnal habits.

We surveyed the damage and got to work with buckets and pumps, to reduce the level of water in the cabin. Each man’s reaction was different. Andrew Somerville was full of plans which poured out cheerfully in the form of logical advice. Johnny Burrows and Andrew went on deck and hauled down the mainsail. They set a trisail and lashed the helm down so the boat could lie more comfortably to the wind instead of across it. When they came below they were shivering as they told us that the rigging was sound, but the rubber dinghy and its contents of freshwater, fuel and gas had been torn from the deck and washed away. As the water level reduced we noticed that there was a gaping hole where the port hand cabin window had been. The sea continued to wash over the boat and several gallons flowed into the cabin at regular intervals. The cabin window had been removed from its mounting but the perspex was still intact. Johnny and I went back on deck and forced the window into its mounting, thus reducing the intake of water to a steady dribble. Grey Bob pumped for a full hour with calm and seemingly unworried, rhythmic strokes. Jake worked in total silence. We took some planks from the floor and shored up the window from the inside. After two hours conditions below started to improve. Everything below decks was sodden. We changed from sodden clothing into wet clothing. Only Johnny had taken the precaution of wrapping all of his spare clothing in tied plastic bags. With true generosity he passed around as many pairs of dry trousers and as many shirts, pullovers and towels as he could spare. The chimney piece of the stove had been washed overboard and we were unable to light the charcoal. We jammed blocks of timber on the inside of the window in an attempt to make it water-tight but it was not completely successful. Andrew once again suggested that it was time to eat, and once again this suggestion earned him the task of cooking it. We replaced the battery and the engine started on the first press of the button. We refilled the batteries with distilled water and we left the engine running to restore the battery charge. As Andrew cooked, Jake sat alone and silent in the cockpit. He had nothing to do apart from study the compass course. We untangled the trailing log and set it to work again. We were able to observe our course and distance but we had no means of calculating leeward drift.

As the stew bubbled on the gas rings a little heat returned, and for some irrational reason I became obsessed with the fact that my American Express card could not be found. The log book, charts, ship’s papers and crew’s passports had ended up in the deep well of the bilge and these were retrieved. A few sodden Norwegian and Sterling notes were also fished out of the bilge but nothing could do me until I had recovered the ridiculous credit card. It was an inexcusable, irrational fuss over something that could be of no value at all at 75°N in the Atlantic Ocean.

Just as Andrew served up piping hot helpings of stew, Johnny found the missing credit card caught in the doorway between the main cabin and the heads. It had been tossed out of the chart table and had somehow found its way forward. With the good hot stew a slight confidence returned, supported by the fact that the boat had behaved impeccably during our two hours of labour. Morale on board improved. Outside, the north-east wind brought heavy, driving snow which was washed from the decks by the sea before it had a chance to settle. The wind increased as the barometer continued to rise. When I went on watch I looked up at the masthead and noticed that pieces of the hand rail, which had been ripped from the deck when the dinghy went adrift, were caught aloft in the halyards in the shape of a crucifix. I suppose that it was a good omen, but perhaps it was a timely reminder of the vulnerability of our circumstances on the wave crests of a mighty ocean. The radar reflector at the top of the mast had been flattened and the VHF aerial, masthead light and wind direction equipment had been washed away.

Twelve hours after the knockdown the barometer read one thousand and six, and we estimated that the wind varied from gale force eight to storm force ten. The boat was afloat, lying at an angle of between 40° and 50° to the wind. Life below decks would have been fine except for the cold. Sleep was impossible because the bedding had been completely immersed in sea water with a temperature of between 0° and plus 1°C. We lay afloat, battered down in the storm, for twenty-five hours. The words of the traveller, Samuel Johnson, suited our experience precisely: “Comfort must not be expected by folks that go a-plaiceing.”

Shardana’s spray hood was flattened when the boat went over.
The Cork Folklore Project

By Geraldine Healy

The Cork Folklore Project was founded as a non-profit community research and oral history archive in a partnership with the Department of Folklore and Ethnology at University College Cork, Northside Community Enterprises and FAS. We are located in the former semi-nary building of St. Finbarr’s College, Farranferris in Cork City. The project first opened its doors in August 1996, and began interviewing the people of the Northside of Cork City to record and preserve their life stories and traditions. This was seen as a valuable effort for posterity, as well as a chance to take an ‘oral snapshot’ of a way of life in a period of great change.

The team of interviewers and researchers tapped into the rich memories of people, some of whom had been born in the 1920s and 1930s, sharing stories of their lives during the ‘Emergency’. The transcripts of these interviews reveal details of life in Shan-don Street, with the great character Molly Owens lighting a tar barrel to signal the arrival of Eamonn De Valera in the neighbourhood, childhood pranks on Gerald Griffin Street with local author, Noel Magner, as he and his friends gathered funds for a visit to a milk and cake shop, and the exploits of the noted local historian, Liam Ó h-Uigín, growing up in Henry Street in the Marsh area of Cork City in the 1940s. Social conditions from the thirties onwards were documented with families struggling to provide the necessities. What emerged from the interviews was a vibrant tapestry of a resilient community. The great wealth of material in our permanent archive represents, above all, a valuable repository of social and cultural history for future generations.

Our permanent public archive contains hundreds of hours of sound and film recordings and around 5,000 photographs, and is available to community groups, schools and individual researchers free of charge. The list of subjects that have come within our ambit is long and includes: bingie; hurling; road bowling; showbands; dra; hunting; Roy Kean; children’s games and rhymes; toys and fashions; textile production and the Sunbeam Wooley Factory; religious processions and feast days; boat building; superstitions; wedding traditions; Fr. Christy O’Flynn; Traveller culture; the Coal Quay and Rory Gallagher, but most centrally, documenting the everyday lives of the local people. All of our interviews are transcribed and great care is taken in the accurate representation of what has been said. There is a strong sense of ‘duty of care’ towards the generous people who gave us their time and life stories. Materials from our archive have proved an invaluable asset to many visiting researchers and students of all ages.

The Cork Folklore Project has had over 90 staff members over the years, providing a variety of training in computer, oral history, interviewing, photography, video and sound recording, desktop publishing, archival methods and more. The researchers are employed on Community Employment Schemes, designed as a stepping stone back to full time employment. Irelandwide, the group have found work or resumed full time education as a result of their experiences at the project.

Cork Folklore Project accomplishments include: the annual production of our journal, The Archive; six half hour radio programmes; two full length books, How’s it goin’, boys? and Life Journeys; four short films, made in conjunction with Framework Films; regular Heritage Week events; a travelling exhibition; and a series of postcards. Check out our website to listen to interview excerpts, watch short films, look at samples of our photo collections, to read our annual journal and find out more about our work. Our recently created Facebook page is updated and added to regularly with interesting photos, audio slideshows and more.

An exciting new endeavour begun in 2010 is the Cork Memory Map, an interactive city map that portrays the landscape in the words of its people. Including visuals, text and audio, the Memory Map documents the personal memories, folklore, occupational lore, characters and stories associated with landmarks, streets and lanes of Cork. This is an ongoing project and will ultimately embrace the entire city of Cork. The project also hopes to develop self-directed city tours which can be downloadable on to smartphones and other media devices.

The Cork Folklore Project offers training, advice and support to groups and individuals involved in oral history and folklore. We are linked as members to the Oral History Network of Ireland and are working with them to provide a framework of support for those interested in collecting the oral history of our country nationwide. To promote this endeavour, The Oral History Network of Ireland hosted a Munster wide forum for oral history practitioners in Cork City in April 2013. The forum was the first of four regional events planned for the OHI-NI for 2013. These events provide people with an opportunity to meet and connect with others active or interested in the field, and to identify training and support opportunities and needs of individuals and groups.

Geraldine Healy is a Project member with The Cork Folklore Project (021) 423-8100 or cnfp@nce.ie www.ucc.ie/research/lfp www.corkmemorymap.org www.facebook.com/corkfolklore-project

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**Jersey’s Coastal Wilderness**

By Anthony Toole

As the boat slowly sailed past the St Catherine’s breakwater, on the north-east corner of Jersey, a small flock of Brent geese, winter visitors from the Arctic, took off ahead of us. Clearing the breakwater, our skipper Richard, revved the motor, sending the inflatable leaping over the first wave and crashing down beyond it, shooting a large cloud of spray to the sides. Though Richard assured us that this was a relatively calm day, one or two of us might well have been pleased that we had not yet had breakfast.

It was 7.15 am, and though the sky was brightening, the sun had not yet cleared the cloud that hung low over the horizon and almost obscured the French coast. Eight of us had clambered into the Jersey Seafaris boat for the 15-minute, early morning trip to Les Écréhous, a reef of rocks and small islands that lay about ten kilometres from Jersey and thirteen from France. We were accompanied by Gareth, a Marine Biologist. The occasional seal bobbed its head above the waves. A flock of oystercatchers flew away as we approached one of the islands. Other rocks were guarded by cormorants and shags. A solitary razorbill ignored us as we sailed past it. As the boat ran up onto the shingle beach of La Marmotière, the second largest island, the dawn sun broke through, transforming the drab, flat scene into one of shining facets and sharp shadows.

Like much of Jersey, Les Écréhous are composed of granite. They and other similar reefs are remnants of a land bridge between England and France that was inundated as the glaciers of the last Ice Age melted. Belonging to the Duchy of Normandy, they became part of England following the Norman Conquest of 1066. Three centuries later, Henry III gave up his claim to the French crown, and Normandy, but held onto the Channel Islands and its rocky reefs.

Over the centuries, Les Écréhous were inhabited, at various times, by monks, smugglers and fishermen. Indeed, the houses of the last group still crown the highest rocks and remain in seasonal use. The highest concentration of these dwellings, dating from the 1880s, cluster around a tiny courtyard on the summit of La Marmotière.

As we scrambled up the shingle, a thin line of surf stretched a few hundred metres across to La Blanquie Île. The sea level, however, was dropping fast, and during the minutes it took for us to explore around the houses and admire the luxuriance of the lichens and succulents that covered the granite boulders, it had fallen sufficiently for a broad shingle bank to link the two islands. Elsewhere, previously hidden reefs had become rocks and rocks had become peninsulas.

The tidal range around Jersey and Les Écréhous is said to be the world’s second highest, extending, at times, to around twelve metres. This has helped create a unique ecology, such that, in 2005, Les Écréhous was declared a marine area of international importance under the terms of the Ramsar Convention.

The extent of the tidal flow, and the movement of currents around the islands has produced very clear, highly oxygenated waters, in which many species of planktonic larval flourish. The rocky platforms offer shelter, protection and food to a high diversity of creatures. More than 100 fish species have been recorded, which include conger eel, blemmys, rays, pollock, bass, Atlantic salmon, common sturgeon and Twaike shad. In addition to seals, there are bottlenose, white-beaked and Risso’s dolphins, harbour porpoise and pilot whales.

Of more than thirty species of vertebrate living in the mud and sand, half are rare in British Isles waters. These attract large numbers of wading birds, including winter visitors and passing migrants.

An important characteristic of these waters is that some species are found here at the northern or southern limit of their range. For example, this is the most southerly reach of the brent goose, a Mediterranean fish. Richard, our Marine Biologist informed us that a small number of the latter confine themselves to a particular pool that becomes exposed at low tide. These gobbies leave the pool at high tide, but return to it when the tide falls.

Some of the species at this limit of their natural habitats are showing signs of genetic variations, resulting from their relative isolations from the main populations.

We spent more than an hour exploring the linked islands, and sitting on the shingle to enjoy our breakfasts, during which time Gareth explained the ecology of Les Écréhous. Then it was back into the boat for the return trip, as some of us had a second morning appointment.

The south-east coast of Jersey, stretching from St Helier to Gorey, was declared a Ramsar site in 2000. Here, the seabed is so shallow that at low tide an area of 17.5 square kilometres becomes exposed, making this one of the largest intertidal reefs in the world.

We drove to La Roque, on the south-east corner of the island and joined a group led by Trudie and Keith, of Jersey Walk Adventures. About two kilometres from the coast, the Seymour Tower stood on its craggy plinth, separated from...
us by an expanse of sand and mud flats, pools and channels and rock platforms. Some in our party accepted the offer of gumboots, others of us decided we could put up with wet feet.

We were first taken to the holding cages that contained thousands of oysters, harvested from the beds that lay in deeper waters. The oysters would be held here for a time before being transferred to tanks exposed to ultra-violet light prior to being sent to markets, mostly in France. There were European oysters in the pools, but the farmed ones were Pacific. Farther out among the rocks were poles festooned with farmed mussels.

We continued through calf-deep pools and over fields of serrated, knotted and bladder wrack, kelp and carrageen. Trudie pointed out examples of velvet horn seaweed and coralline algae, and tempted us to taste sea lettuce and other rock pool delicacies. She also found a piece of seaweed clustered with small colonies of star sea squirt (Botryllus schlosseri), and in one pool, a snake locks sea anemone.

The pools and channels held myriad shells, tops, limpets, periwinkles, whelks and the occasional ormer and oyster, half of them abandoned, half still occupied. In one pool, we saw a limpet being predated by a whelk. The roof of a small grotto, formed by boulders, was coated with a layer of orange sponges. A series of incongruous tracks across gravel beds, some of them several metres long, led to stones that had been dragged along by currents acting on bunches of seaweed rooted to them.

Among the sand ripples were concentrations of what appeared to be dark green algae, but on closer examination, proved to consist of millions of tiny mint sauce worms (Symsagittifera roscoffensis) that obtained their nutrition and their colour from a symbiotic alga. Each worm contained around 25000 algal cells.

We came to a rock on which a large letter P was carved. This, said Keith, dated from 1740, when, following a dispute, the rights to harvest seaweed were granted to the Paine family. Evidence of much earlier, probably seasonal human activity had been found in butchered mammoth bones dating back to Neolithic times, when the land bridge still existed and forests of alder and birch covered the area.

As we approached the Seymour Tower, a waterspout appeared over the sea to the south. Seeming to form in a lower stratum of cloud, it reached up to a higher, broader cumulus, and hovered there for several minutes before slowly fading. The Tower itself was built as a defensive structure during the 18th century, and stands on a tall, granite shelf. It is reached by means of a rough-hewn staircase, and contains seven bunk beds and a stove, with fridge and lighting powered by roof-mounted solar panels. It can be booked by groups of people who are happy to spend a night cut off from the land by the high tides.

We climbed to the roof, where Trudie hoisted the Jersey pennant while we enjoyed the quite stunning view back over the rocky expanse to the coast. Despite its sometimes being compared to a moonscape, we had found it to be a magical region, teeming with a huge variety of marine life.

Websites:
www.jerseyseafaris.com
www.jerseywalkadventures.co.uk

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Pochin Mould course, bees and wasps - all again to see tiny midges, little more - from the lordly hornet. There are birds, yes, but much actual sky and all that's in it. Drifting past but look at the ground or the odd clouds might notice the blue back. MANY people have eyes when struck that way. But dive into water, hard as iron it, a gannet's body is built to and the vertical dive to strike the great albatross; think of this. Sir Walter Scott fancy we would not enjoy a between dry stone work. I birds, with air moving stone huts in which to dry the about to fly. The people in St. did well eating them. They workers everywhere and Cork much of the industrial revolu- the Slave Trade (whose vast ery of the New World brought men into the air. The discov- Castle in Scotland, he landed himself wings, and took off from the ramparts of Stirling him himself. The discov- ers glassy smooth. A agile, with all its black feath- and wheel at low level. The swift is a beautiful, flying machine, streamlined and agile, with all its black feathers glassy smooth. A mediaeval abbot man made himself wings, and took off from the ramparts of Stirling Castle in Scotland, he landed on a manure heap baited objects below and blamed his failure to fly on having used hen feathers, for hens haunt middens (waste heaps) and do not fly much. It was a woman that got men into the air. The discov- ery of the New World brought sweetness to our food, and the great sugar plantations and the Slave Trade (whose vast profits were the power behind much of the industrial revolu- tion). So there were sugar workers everywhere and Cork had a number of sugar workers. The refined sugar was poured into conical moulds, making a sugar loaf - whence our sugar was poured. The refined sugar was poured into conical moulds, making a sugar loaf - whence our sugar The American species (and oil lamps were used for the French Revolution, the King of France was no fool and realised how much harm could follow with an excited public all trying to fly. It had to be properly controlled. Today's highly efficient Air Traffic Control can look to a far off birthday and a soon to be deposed French King. Extract of a letter from Paris, May 2, 1784. "His Majesty forbids the fabrication of any aerostatic machine, under pain of imprisonment. His Majesty strictly enjoining such persons as were desirous of making any experiment of that nature to apply to him for permission... the reasons for these prohibitions are the dangers which are likely to follow the failings of these machines upon thatched houses, hay stacks, or other inflammable materials for a fish." He king did not want to halt progress. "These precautions are not intended, however, to let this sublime discovery fall into neglect, but only that the experiments should be confined to the direction of intelligent persons."
LCD displays, flat screen televisions and computer monitors, solar cells and touch screen devices all depend upon a rare element that few people have heard of.

Indium is a member of the same group, or family of elements as aluminium, but whereas the latter is the most abundant metal in the earth’s crust, indium is the 61st most plentiful.

Its name has nothing to do with India, but refers to the manner of its discovery. In 1863, German chemists, Ferdinand Reich and Hieronymus Richter isolated a yellow powder they were able to extract from a sample of the zinc ore, sphalerite. On testing this with a flame and analysing the light produced, they found a distinctive indigo coloured line in the spectrum, which could not be related to any previously known element. They named the metal after this spectral line.

An ore of indium is known, but it is extremely rare and of no commercial value. The metal is obtained as a by-product of the extraction of zinc and lead from their ores, of which indium may comprise up to 1%. The impure metal is then purified by electrolysis.

It is almost unique among the elements in that, although it does have stable isotopes, its most abundant isotope, that with an atomic mass number of 115, is very weakly radioactive, though its half-life is thousands of times longer than the present age of the universe. Another unusual property of indium is that, when bent, it emits an audible squeak.

Indium was used during World War II to form a thin, lubricating film on the bearings of aircraft engines. Its vapour, when condensed onto a glass surface, makes a mirror of high quality. It can be used in low melting point alloys in sprinkler systems and to make lead-free solder. An alloy of tin and indium with gallium, another member of the aluminium family of elements, is liquid down to a temperature of minus 19°C, and is employed as a non-toxic alternative to mercury in thermometers. The same alloy can also substitute for mercury in liquid mirror telescopes.

Modern semiconductor technology, particularly in the field of communications, has discovered new uses for indium. Light emitting diodes (LEDs) make use of alloys of indium and gallium with either nitrogen or phosphorus. CIGS semiconductors (copper-indium-gallium-selenium) are used in flexible thin-film solar cells.

The most widely applied compound, however, is indium tin oxide (ITO), which is made of 90% indium oxide (In2O3) and 10% tin oxide (SnO2), and is transparent, yet able to conduct electricity. This almost unique combination of properties has led to its extensive use as the electrodes in liquid crystal displays (LCDs) and flat screen televisions. In these devices, each pixel consists of a light absorbing material sandwiched between the ITO electrodes, which are able to convert the light energy into electricity.

Touchscreens in the newer generations of mobile phones and e-readers also use ITO electrodes separated by a tiny gap, the capacitance of which alters when touched by a finger. ITO is brittle, but the manufacturers of mobile phones operate on the expectation of the lifetimes of their devices stretching to little more than one-and-a-half years. Items such as e-readers, however, which would be expected to last longer, might not have sufficiently durable touch screens.

A bigger problem with indium is in its supply. Around 1200 tonnes are used each year, about 40% from mining and the rest from recycling. Indeed, the touch screen market alone is at present worth almost $1.5 billion per year, and rising rapidly. Known reserves are estimated at 16 000 tonnes, over 60% of which are found in China, which has recently begun to restrict its export of metals, among them indium.

Possible alternatives to ITO are generally less transparent, less conducting, more brittle, toxic or a combination of these. However, the Indium Corporation, which controls much of the supply of the rare metal, has invested in the discovery of new deposits and more efficient recovery methods. Even as the demand soars for the modern devices we are becoming ever more dependent upon, the Corporation remains confident that supplies can meet the demand.

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Thoughts on the Future for the Irish Fishing Sector

By Lorcán Ó Cinnéide

“When you’re gone, you’re gone, and it’s better to keep your counsel after that” was a wise piece of advice an old political friend of mine once gave me. With a year’s space from direct involvement in the fishing industry, it is only as a result of serious arm-twisting from Sherkin Comment that I venture to give some views as to its future. To do so in a serious way would take a book but at the risk of over-simplification, I venture a few opinions which may not be popular.

The fishing industry is a series of very diverse activities that involve the catching of wild fish from the sea. It is a common misconception to treat the industry as one amorphous unit. The catching sector includes small inshore potters and netters, a variety of day-boats trawling and gillnetting, whitefish trip boats – trawlers, netters and seiners – spending from three to ten days at sea, their near relations the dedicated Nephrops (Prawn) fleet, polyvalent now mainly pelagic vessels and at the end of the spectrum the large-scale RSW pelagic fleet. The economic and resource outlook for each fleet segment is specific to each and their present – and futures – vary accordingly. For example, Mackerel and herring are good businesses to be in. Whitefish in general is anything but.

Let’s be clear, many indicators exist which suggest that the Irish fishing industry should have a bright future: The huge continental shelf and inshore waters off Ireland still contain a fantastic resource of fish stocks which are resilient and capable of rapid regeneration if managed properly. That is not to say that all stocks are in a healthy state, they certainly are not. The market demand for fish globally is rising rapidly and Europe is dramatically under-supplied from within, even if the current economic climate and global trade trends have led to depressed prices for many fish species. The huge projected rise in the earth’s population is fueling a vast increase in demand for protein and there is growing appreciation of the health benefits of eating fish. While aquaculture can play a role in meeting some of the increased demand, mother nature and better management can allow the business of wild fish capture to contribute substantially, despite the fact that many policymakers have apparently come to discount the potential of wild-caught fisheries.

Conversely, massive problems exist, some of which are completely in the lap of the Gods: The price of fuel is likely to be high into the future due to global demand for oil and its finite nature. While there is scope for efficiencies from vessel and engine design and more fuel-efficient fishing gear, these are in the long-term and even then fuel will be a major input cost. The impact of ocean acidification and global warming may have long term impacts on the distribution and abundance of stocks in a manner as yet unknown.

There are massive solvable problems which show no sign as I see it of being tackled in a serious way and which are and will, if they remain unaddressed, continue to undermine the prospects for the fishing industry and the potential of much of it to survive, still less develop.

There is a siren call which is applicable to a major problem in the Irish industry “I ndeireadh na coda a throideann na coileáin” (The pups only fight for the scraps!). Not that we are facing the last of the stocks – far from it – but the issue is the availability to individuals of legally available quota of the most profitable species. This has to do with developments in share-out of quotas in Ireland and the EU: the decreases in those quotas over time, enforcement, viability and indeed in some cases, over-fishing. Enormous fragmentation in representative structures, geographic rivalries and conflict over who gets what share of available quotas is tearing the industry apart and the less than impressive policy and management response to these pressures is not helping the situation. These resource fights occupy a lot of energy with which mitigate against any coherent unity emerging from the industry and an industry less capable of rationally addressing the external pressures from regulation or international policy and proper, sustainable management.

The management framework for fisheries, particularly the share-out of quotas within and outside Ireland, determines the access to the resource – the volume individual vessels can catch. From an Irish perspective, given that most fisheries outside the inshore areas are shared with other countries, what the catching sectors in France, Spain, the UK, Netherlands and others is of vital significance. Thus the shape of the future Fisheries Policy which is currently under review is a major issue – quota share-outs, technical regulations, restrictions on vessel power and the overall size of fleets, however measured and the whole enforcement regime which will exist.

The development of global standards of good management where fisheries would compete on a like-with-like basis as regards environmental, hygiene and safety standards would go a long way to ensuring the ability of Irish and European fish to compete profitably in the EU market which is currently flooded with supply from outside sources.

Personally and this is accept is very much a minority view, I think that not individualising fishing rights for fixed periods for some fisheries at least is a major mistake. I appreciate the risks of concentration and foreign ownership – things that can be legislated for in my view – but the lack of individual rights and certainty about the future also leads to a lack of individual responsibility and also a lack of opportunity for essential investment and employment.

The over-concentration on discards policy in the new CFP reform is distracting from many of the real issues which should be tackled: that an ever-increasing complexity of policy and ineffective management measures substituting for action has sucked everyone involved – fishermen, policy-makers, managers, scientists, control agencies and development agencies – into a type of parallel universe which breeds massive cynicism and huge despondency – although the degree of disillusion is very much related to which part of the industry one is situated and the state of one’s bank balance.

The enormous prize of sustainable long-term employment and wealth creation through a system which provides reliable inputs for scientific analysis, proper setting of quota levels, compliant fisheries and optimised supply of high quality food – as well as employment and profits – seems for many to be an unattainable goal. It is not.

The complete, total and abject failure to bring in rational management of fishing inshore waters – entirely within Ireland’s own control due to local political difficulties, the unwillingness of many inshore fishermen to accept the need for management – or fear of inappropriate management – and what seems to be a loss of confidence by officials and successive Ministers in the face of experience in the past decade – is blighting the present and future for Ireland’s inshore fisheries which account for the majority of vessels and indeed employment in the catching sector.

To retain optimism about the future in a situation as we find ourselves is difficult and there is a general unwillingness to accept some of the realities on many sides of the equation but I believe that many people involved at various levels of the industry would privately share some of the concerns I have expressed here. The prospect that it might be possible to join those private voices together to an extent that might influence general thinking without giving a veto on essential change to recalcitrant minorities’ rights – one has to be hopeful of. There is a great deal to play for, despite all the difficulties that exist. We haven’t died a winter yet. .

Lorcán Ó Cinnéide is a former CEO of the Irish Fish Producers’ Organisation and a current board member of the Marine Institute. The views expressed here are entirely personal and do not represent the views of any organisation or body he is or is associated with.
CONSERVATION THROUGH INNOVATION
A Namibian Vision

By Stuart Munro

OPENED in 2007 by renowned conservationist Marlice van Vuuren and her husband Dr Rudie van Vuuren, N’/a’an ku sê Lodge and Wildlife Sanctuary strives to protect and improve the lives of the people and wildlife of Namibia. Their vision of “an Africa where humans and wildlife can live and thrive together” has been the driving force behind all the efforts towards fulfilling their mission: “to conserve the land, cultures and wildlife of Namibia and rescue species threatened by an ever shrinking habitat”. Their philosophy of “Conservation through Innovation” is at the core of the management techniques used in the many award-winning projects run by the N’a’an ku sê Foundation as it was renamed in 2011. The name N’a’an ku sê means “God will protect us” in the San bushman language.

Situated 42km east of Windhoek, the Wildlife Sanctuary provides a safe haven for many orphaned and injured animals including lions, cheetah, leopards, African wild dog, caracals and baboons, all of which are cared for by a dedicated team of staff and volunteers. It also serves as the base for the Caracal Conservation Research Project. The N’a’an ku sê Foundation also works with the San bushman community to provide employment, healthcare and education. We have an on-site pre-primary school, the ‘Clever Cubs’, providing free education for the children of all the local staff. The not for profit charity lodge on the property was set up to provide jobs and training for the local bushmen community and provides an excellent starting or finishing point for those travelling around Namibia.

The N’a’an ku sê Foundation also runs its Lifeline Clinic at Epukiro in the east of Namibia. This facility, set up in 2003, provides free primary health care to the marginalised San bushman community in the area. The clinic examines and treats approximately 3,500 patients a year (40% of whom are babies and children) and provides transport for those in need of urgent medical attention to the nearest hospital 120km away in Gobabis.

Farther south is the Neuras Wine and Wildlife Estate where “wine supports conservation”. Neuras is an oasis on the edge of the Namib Desert region and is host to the driest territies in the world. Most of the profits from the wine making are channelled straight back into the vital research of the vulnerable Namibian wildlife carried out by the researchers based there. N’a’an ku sê receives no government funding relying on the generous donations and sponsorships from individuals, companies, trusts and foundations around the world to fund all their conservation efforts. These include Land Rover, SeaWorld & Busch Gardens, National Geographic ‘Big Cat Initiative’, Chester zoo, Colchester zoo, Sirtrack, Idea Wild, Spots Foundation and of course the Jolie-Pitt Foundation. However, none of the day-to-day work on the sanctuary could be carried out without the hundreds of ecotourism volunteers that come from all corners of the world to give their invaluable time and energy to help us in our mission. Volunteers stay from between 2 weeks to 3 months, working alongside the Wildlife and Research staff, getting involved in a wide range of different activities. From preparing and distributing all the food for the animals, taking the baboons on their daily walks in the veldt, helping with the building and maintenance of vital infrastructure to joining the research team on game counts, the volunteers’ routines are varied and busy. Whilst we strive to rehabilitate and release as many animals as possible back into the wild, many of the animals living at N’a’an ku sê will unfortunately never be able to be released. Most of them have been orphaned as babies or kept as pets by private individuals who can no longer care for them. As such these animals have become so accustomed to humans that if they were to be released they would not show the natural reaction of running away from humans, and as such, would most likely be shot. Some however (for example leopards, cheetah and brown hyenas) are healthy animals which have come into conflict with human activities such as livestock farming or game-ranching. These animals may then become candidates for the release programme run by the research team.

The research department has, since 2008, been responsible for the successful capture, rehabilitation and release of more than 50 large carnivores from conflict situations. These individuals have been intensively monitored by the research staff for up to 3 years after release and provide invaluable information on the ecology and movements of these elusive and beautiful animals. Their work to mitigate human-wildlife conflict is ongoing, providing advice and assistance to over 150 commercial livestock farmers on management techniques to reduce losses by opportunistic livestock predators.

My 2 years working with the research team at N’a’an ku sê thus far have been the most rewarding I have ever experienced and with many exciting new projects in the pipeline I have no doubt that the satisfaction I experience every day will continue to multiply. If you wish to visit us and volunteer, or support any of our projects, visit us at www.naankuse.com or follow us on facebook (www.facebook.com/naankuse).

Stuart Munro, a Research Biologist with the N’ai-aan ku sê Foundation, was formerly a volunteer at Sherkin Island Marine Station.

Marline van Vuuren's husband, Dr. Rudie van Vuuren, and his wife, Marline, opened N’/a’an ku sê Lodge and Wildlife Sanctuary in 2007. Their vision is to create a place where humans and wildlife can live and thrive together. The sanctuary provides a safe haven for many orphaned and injured animals, including lions, cheetahs, leopards, African wild dogs, caracals, and baboons, all of which are cared for by a dedicated team of staff and volunteers. The N’/a’an ku sê Foundation also runs a pre-primary school, the ‘Clever Cubs’, providing free education for the children of all the local staff. The facility is set up to provide jobs and training for the local bushmen community. The foundation also has a Lifeline Clinic at Epukiro in the east of Namibia, providing free primary healthcare to the local San bushman community.

The N’/a’an ku sê Foundation is supported by donations and sponsorships from individuals, companies, trusts, and foundations around the world. The organization’s efforts include Land Rover, SeaWorld & Busch Gardens, National Geographic’s ‘Big Cat Initiative’, Chester Zoo, Colchester Zoo, Sirtrack, Idea Wild, Spots Foundation, and of course the Jolie-Pitt Foundation. The volunteers who stay at the sanctuary for between 2 weeks to 3 months work alongside the wildlife and research staff, getting involved in a wide range of activities such as preparing and distributing food for the animals, taking the baboons on their daily walks in the veldt, and helping with the building and maintenance of vital infrastructure.

The research department at the N’/a’an ku sê Foundation has been responsible for the successful capture, rehabilitation, and release of more than 50 large carnivores from conflict situations. The individuals are monitored intensively by the research staff for up to 3 years after release. The work has provided valuable information on the ecology and movements of these elusive and beautiful animals. The research team aims to mitigate human-wildlife conflict through ongoing advice and assistance to over 150 commercial livestock farmers. They provide management techniques to reduce losses by opportunistic livestock predators. The research team has contributed to the successful release of many animals back into the wild, and their work continues to multiply.
Marlice van Vuuren, one of Namibia’s most well known conservationists, and her husband Dr. Rudie van Vuuren started N/a'an ku sê Foundation in 2007 with two aims - to protect and conserve Namibia’s vulnerable wildlife and to improve the lives of the marginalised San Bushman community. In addition to the projects mentioned above we now run several projects including:

- A Wildlife Sanctuary for orphaned and injured animals
- Carnivore Conservation Research Project to protect and conserve wild cheetah, leopard and brown hyena in Namibia.
- Clever Cubs School and education for San children
- Lifeline Clinic and medical outreach for the San community
- Namibia’s only charity lodge - where all proceeds are channelled back into our charitable aims.

In 2011 N/a’an ku sê partnered with the Solitaire Guest Farm to form the Namib Carnivore Conservation Centre. An educational centre with a 500 ha cheetah boma used both for cheetah that cannot be released and as a ‘training ground’ for cheetah that will ultimately be released in suitable areas.

In 2012 N/a’an ku sê became the new owners of Neuras Wine and Wildlife Estate. Combining land use for both conservation and wine production. All profits from the wine production are channelled back into our charitable aims.

For further information on N/a’an ku sê Foundation, read the article by Stuart Munro on page 15 and also visit the website www.naankuse.com or email gemma@naankuse.com

Images courtesy of N/a'an ku sê Foundation
By Dr Ciaran Byrne

THE River Lee rises near the border of Cork and Kerry in the steep mountains which encircle Gougeane Barra Lake. It flows almost due east along a narrow valley for about 65km to Cork City, draining a total area of 1,100km. Inniscarra Reservoir is situated on the River Lee system. The reservoir encompasses an area of 489 hectares and was created by the Electricity Supply Board (ESB) between 1952 and 1957, with the construction of two dams on the River Lee at Carragadrohid (21m high) and Inniscarra (44m high). The reservoir is also fed by three secondary streams. These are the Drispoey and Glashagarriff Rivers from the north and north-west and the Kame River to the south-west of the reservoir.

The reservoir is situated in a mainly rich agricultural land area with several wooded areas along its banks. Around 30% of its shoreline is gently sloping with sloping rocky sandy margins, which provides good areas for angling, while several areas with the traditional reservoir aspect: steep banks of sheer rock etc, especially when water levels are high. At normal levels this water covers an area of over 530 ha with fishable bank covering over 25 miles.

In the creation of such a large water supply, one of the added bonuses was the potential to create a large angling resource in the region, and we have the insight and dedication of a wonderful man, Mr. Noel Hackett to thank for this. Noel was a technical officer with the Inland Fisheries Trust, the IFT as it was commonly known. It was the precursor to the former Regional Fisheries Boards and now Inland Fisheries Ireland (IFI). The IFT was responsible, amongst other things, for developing coarse fisheries in Ireland and by 1980 had provided in the region of over 18,000 fishing stands throughout the country. In some respects the Technical Officers of the IFT were the pioneers of the fisheries world. There was a wonderful sense of what could be done to develop the fisheries resource coupled with an understanding of the biology and ecology of the main fish species which ensured significant successes.

To a pioneer like Noel the creation of two large dams on the River Lee in the mid-1950’s would have been an unmissable opportunity. In some respects the work done by the IFT and pioneers like Noel sowed the seeds for the coarse angling resource which we have today, and the continued popularity of Ireland as a coarse angling destination.

Before the reservoirs were created, the River Lee was a salmonid river and it provided the initial stocks of brown trout (Salmo trutta) for the reservoir. This stock was enhanced in the 1960’s with a number of stockings of brown trout fingerlings. Other species such as pike (Esox lucius) also thrived in the still-water environment. However the fish stock history of the lake altered significantly since its creation and the designation of Inniscarra as a major coarse fishing water in the region was ultimately defined by the stocking of other coarse fish species into the reservoir.

Perhaps the most famous of all of these events occurred when Noel and his colleagues introduced 200 adult bream (Abramis brama) into the upper Carragadrohid Lake in 1974. It was not until 15 years later that large stocks of bream were discovered in the lower Inniscarra Lake, which we believe derived from this initial stocking. Since then the reservoir has been famous for its bream angling with fish of around 7lbs not uncommon. Along with further stockings of roach x bream hybrids and the presence of large natural populations of rudd (Scardinius erythrophthalmus) and pike, Inniscarra Lake has earned a reputation as one of the premier coarse fishing waters in the entire country with mixed bags of 100lbs not uncommon and potentially catchable to even the average recreational angler.

In 2008 the then Central Fisheries Board conducted a comprehensive survey of the lake, primarily to assess the species present, their relative abundances and also to assess their growth rates when compared with other waters. The fish community was composed of eleven fish species, with the population dominated by stocks of perch and bream, and reasonable stocks of other species.

The stock of bream present in the lake during this survey was found to be one of the most prolific populations in the country. Their presence in all depths and locations of the lake was a clear indication of that dominance and the sustainability of the population. Their catch per unit effort (CPUE) densities were found to be considerably higher that two other premier angling venues, Lough Garadice and Lough Ramor. Given that bream are one of the most important coarse fish species for angling tourism in Ireland this survey has further enhanced the lakes reputation as a coarse angling paradise. It is though that in part the success of the bream stock is related to the availability of a range of different habitat types, from shallow bays circa 1m in depth, which younger fish tend to favour, to deep open water (>15m) channels, which provide habitat for older fish.

Thus it is from the dedication and foresight of a true fisheries pioneer, Noel Hackett, that we now have one of the finest coarse fisheries in the country, providing recreational angling not only to a host of local angling clubs but also to a swathe of visiting anglers. I have no doubt that the stocking of bream and other coarse fish in to the lake is also generating a huge economic boost to this part of Cork, and I also suspect that Noel probably had an inkling that it would. I never had the pleasure of meeting Noel but from what I have heard from Fisheries staff and anglers alike we had a man who had what we now know as a ‘can do attitude’.
By Matt Murphy

As a youngster, over 70 years ago, my great joy every week was to get to copies of those wonderfully simple comics The Hotspur, The Rover and Adventure. They had many stories and characters such as Alf Tupper and John Wilson, both wonderful athletes. However, there was one ongoing story which had a lasting impression on me throughout life and in many ways it has been how I have judged people ever since. It was a man called Johnny Appleseed, who travelled America planting appleseeds wherever he went.

By doing this he left a legacy for future generations. I have known a few Johnny Appleseeds in the past 70 odd years and one such person was the late Noel Hackett, former technical officer with the Inland Fisheries Trust / South Regional Fisheries Board. (Giaran Byrne, Chief Executive of Inland Fisheries Ireland wrote about Noel in his article on page 13)

In 1997, I had the honour of unveiling a beautiful sculpture to commemorate Noel’s life, on the banks of Imniscar Lake on the River Lee, Co Cork. Noel had great dedication and single mindedness and because of his vision and activities Imniscar Lake is now one of the finest bream fisheries in Europe. The enormity of this legacy for future generations is impossible to calculate.

Noel grew up with nature from an early age, spending most of his free time fishing from the banks of the Shannon and the Munster Blackwater. He observed wildlife at close quarters and thus the seed was sown and left to sprout and blossom over the next four decades.

On leaving school he got a job with Clover Meats in Limerick. In 1996 he was interviewed for a post of supervisor with the Inland Fisheries Trust (a precursor to the Regional Boards and then Inland Fisheries Ireland). When it was pointed out he would have to live in Macroom, he said he was delighted. However, he told the story that when he came out of the interview he had to look up a map to see where Macroom was!

Noel used Macroom as a base for working around Ireland. His work at the beginning included removing pike from rivers and lakes. He then went on to surveying small lakes nationally in order to assess their development potential. He helped in the fishing management of carp and tench species into areas of the State where they did not previously exist – such as the Erne, Inishbofin Island, off the west coast, Herbert Park Pond in Central Dublin and Kelly’s Lake in Clare. His wife Eileen told me that Noel disappeared early each Monday morning and arrived some late Saturday night, having been all over the country. When it came to his job Noel forgot everything else – even eating!

Noel had wonderful interest in wildlife and noticed everything. Eileen said that Noel learned the latin names of hundreds of wild flowers and insects that he noticed when he travelled around the country and she had to examine him! His passion for a couple of years was – a greyling goose which he received as a chick. Often the goose took off in the morning and would return when he saw Noel returning in his car. Eventually Oscar returned to the wild.

He treated natural values such as new cars and had no interest in clothes. He was a hoarder and a hunter. One of his collections was of old botltes. He loved to hear of new boot sales to see what he could pick up – some more items to hoard.

His family, whom he adored, couldn’t but notice that Noel was always available to help anyone in need. Only once in all the years he never changed. He was prepared, day or night, to solve the problem.

First met Noel in 1972 when phoning him he came to Sherkin to put some carp in to Louisborough Lake, near Ordree – a small lake on the island. I had continuous contact over the years when he organised freshwater fish for our marine station’s exhibitions at Connolly Hall, Cork City. I have one fond memory of this life – those lakes would not have been stocked.

Noel knew how to bring people with him. He had this wonderful understanding of how rural Ireland worked and he was able at all times to bring people with him. He never stocked any lake or river unless the local angling club was involved – even if he had to form a new club in the area.

Noel Hackett believed that the stock of lakes in Cork and Kerry would be vital in identifying tourist routes and others into these areas. It would also help the local community. Thus he always referred to them as community lakes. His latest reports on “Managing Community Lake Trout Fisheries” shows the immensity of his work. Taking one season 1990 – a total of 6,568 fish permits were sold for the 13 lakes in Cork and Kerry. The reported catch was 19,952 fish, with 49,953 trout released. He reported pollution problems and anglers comments, whether positive or not. But the real gems in the report were the long stories of places that were mentioned in the notes in the left column by visiting anglers.

Noel using a record catch would organise a photo, if near home he’d get there himself. A note and a photo was then sent to the nearest local paper of the angler. In 1990 he wrote and sent a photo to the “West Australian” newspaper after a Dews Pember caught a 5.8 kilo Rainbow Trout at Barfinnally Lake, Kinnerower.

Yes, Noel Hackett brought immense happiness to thousands of adults and youngsters with his community lakes. Note I say “his” because I know that no one can question that if Noel Hackett had not passed through this life – those lakes would never have been stocked.

When I asked what was the opinion of oficialdom in Dublin to Noel Hackett and the stocking of the lakes, with his unorthodox ways – the answer was “please don’t tell me”. They knew he ran an independent republic and they would rather not know. I would add it would have been pointless – Noel Hackett would have found another way! What is important to say is that throughout Noel’s many years with the South Western Regional Fisheries Board he had the administration and support of the managers and the board members. They realised Noel was a unique human being and needed the space to deliver.

As Johnny Appleseed sow the apple seeds Noel Hackett's seed, which are now blossoming throughout Cork and Kerry and further afield. He brought happiness to thousands and will continue to bring it to thousands upon thousands of others across the decades ahead.

Matt Murphy, Director, Sherkin Island Marine Station, Sherkin Island, Co. Cork.
LUMPFISHES
(Family: Cyclopteridae)
in Irish & North Atlantic Waters

By Declan T. Quigley

LUMPFISHES belong to a small family of poorly known Arctic-Boreal marine fishes (Cyclopteridae) comprising about 6 genera and 28 species (Nelson, 2006). The actual number of species within the family is uncertain because morphological, meristic and ontogenetic differences between juveniles and adults and between males and females have sometimes led to taxonomic confusion. For example, it has been speculated that the family may contain several “species pairs”, with counterparts in the Pacific and Atlantic differing in few characteristics, although apparently geographically separate e.g. Eumicrotremus orbis versus E. spinosus, E. andriashevii versus E. tereanovae, and Cyclopterus brashnikowi versus C. maculatus (Mecklenburg & Sheiko, 2003; Robbins et al., 1986). A recent study noted that although E. spinosus (Fabricius, 1776) was morphologically distinguishable from E. eegypti (Koefoed, 1956) in the Atlantic, this distinction is actually genetically identical (Byrkjedal et al., 2007). Indeed, the authors discovered that the E. spinosus specimens were all female, whereas the E. eegypti specimens were all male. It is interesting that a species described in 1956 should actually represent the males of a species first described in 1776.

Although the majority of species have been described from the North Pacific, 3 genera and 8 species have been recorded from the NW Atlantic, including 5 species from the NE Atlantic (Table 1). However, only one species, Cyclopterus lumpus, has been recorded from Irish waters.

Lumpfish or Lumpucker (Cyclopterus lumpus L.)

The Lumpfish or Lumpucker is the most studied species within the family Cyclopteridae. The species ranges throughout the Northeast Atlantic, in the NW from Hudson Bay (Canada) and Greenland southwards to Chesapeake Bay and in the NE from Novaya Zemlya (Russia) and Spitsbergen (Norway) southwards to the Mediterranean (rarely) [Dulcic & Golani, 2006; Banon et al., 2008]. The species is regarded as common in Irish and NW European waters (Went & Kennedy, 1976; Nelson, 2006).

Commercial Exploitation of Lumpfish

The vast majority of Lumpfish species have no commercial value because they are either too small or are rarely captured. However, C. lumpus is targeted by several countries in the North Atlantic, particularly for its roe which is used in the production of lumpfish caviar. Male flesh is considered to be a delicatessen product consumed by many people in Iceland where they are traditionally boiled in water and vinegar and served with potatoes and a piece of lumpfish liver. However, female flesh is not considered as good; they are hung up to dry in the open for some time before being consumed and are something of an acquired taste (www.fisheries.is/main-page/caviar). During 2009, a total of 279 small inshore vessels targeted the species in Icelandic waters. Approximately half of the roe went to domestic caviar factories and the other half, valued at about €15 million, was exported unprocessed (Ensinarion, 2010).

Juvenile Lumpfish and Cold-Water Situated

In what may be a defensive reaction, lumpfish are able to inflate their bodies with swallowing air or water, similar to puffer fish (Quigley, 2002). Nevertheless, lumpfish are eaten by a wide range of predators in both inshore and offshore habitats, including swordfish, sharks, seals, otters (Kruuk, 2006), corromnors (West et al., 1975), angelfish, habitat, Greenland sharks and blue sharks (Dorman, 1987). Over the last few years Norwegian and Shetland salmon farmers have been experimenting with using juvenile lumpfish as a possible means of controlling sea lice (Marter, 2012), particularly as a substitute to using wrasse (Family Labridae) [Quigley, 2009] which do not appear to survive as well in cold-water sites situated in more northerly latitudes. During recent years, thousands of juveniles have been successfully reared at the Oceanworld (www.dingle-oceanworld.ie) and subsequently released to the wild.

References


By Declan T. Quigley, Dingle Oceanworld (Shara Beo Tre), The Wired Whelk, Co. Kerry.

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Eumicrotremus orbis Linnaeus, 1758
Eumicrotremus spinosus (Cantor, 1842)
Eumicrotremus andriashevii (Nikolsky, 1921)
Eumicrotremus tereanovae Nikolsky, 1921
Cyclopterus maculatus (Parauchenius maculatus) (Linnaeus, 1758)
Cyclopterus brashnikowi (Apt & Fleeger, 2001)
Cleaning the Hudson River

By Walter Mugdan

FROM 1946 to 1977 the Hudson River, long fabled for its beauty, became the sewer for more than a million pounds of toxic chemicals. Polychlorinated biphenyls – PCBs, classified by the U.S. EPA as a probable human carcinogen – were manufactured by the General Electric Company at plants located in Fort Edward and Hudson Falls, some 200 miles north of the Hudson’s mouth in New York City. Both plants discharged PCB wastes directly into the river. When a nearby dam was removed in 1973, mud laden with PCBs surged down the river. Most settled in the near downstream reaches of the river, behind three other dams, but some of the chemicals made their way all the way to New York Harbor. PCBs are taken up by plankton, tiny plants and animals – and “bioaccumulate” all the way up the food chain into worms, shellfish and fish, birds such as ospreys and bald eagles, and mammals like otter, mink and humans. Because of PCBs, the Hudson has for over thirty years been largely closed to fishing for hatched consumption, including the commercially valuable striped bass fishery. However, many anglers eat the fish they catch despite these restrictions.

Now the damage is being repaired. In 2002 EPA announced its final decision to dredge the toxic sediments out of the river. EPA determined that about 500 acres within a 40-mile stretch north of Albany should be dredged, resulting in the removal of 2.65 million cubic yards of PCB-contaminated mud. Excess water would be squeezed out of the mud and treated. The dried mud would then be shipped by rail to licensed disposal facilities hundreds or even thousands of miles away.

As the source of the pollution, GE – one of the world’s largest corporations – is, under the United States landmark “Superfund” law, legally responsible for the costs of cleanup. And those costs are large indeed, estimated at up to $2 billion.

After years of extensive sampling to delineate the precise areas to be dredged, and designing and building the 100-acre water treatment plant and other necessary infrastructure, dredging finally began in 2009. The project, estimated to be completed by around 2016, will result in the removal of some 150,000 pounds of PCBs from the river – about 65% of the PCBs still left in the 40-mile stretch. Of course, the dredging won’t be able to get all the PCBs. Enough will be left behind so that some parts of the river will still be unsuitable for non-restricted human consumption of fish for years to come. But EPA projects that after dredging is completed, the fish will be much less contaminated and much safer for people and other animals.

For many years GE had vigorously opposed the dredging project. GE argued that natural processes are causing older, contaminated sediments to be buried by cleaner sediments, eventually taking the PCBs out of circulation. But EPA gathered strong evidence that widespread, permanent burial of contaminated sediments was not happening: in fact, PCBs are often brought back to the surface and redistributed. In short, the river was not cleaning itself.

GE also predicted that the cure would be worse than the disease, because PCB-laden mud would be resuspended during dredging and would therefore recontaminate the river. GE also maintained that it would not be possible to carry out the project on EPA’s ambitious time schedule, while also meeting the stringent operational standards set by EPA to avoid unacceptable water and air pollution impacts from the dredging itself.

To assess and address these concerns, EPA agreed to an unprecedented procedural step: after the first year of dredging in 2009, there was a year-long hiatus in 2010 during which an independent, scientific peer-review was carried out. The purpose of the review was to evaluate whether the PCB removal goals of the project could indeed be met while simultaneously adhering to EPA’s rigorous time schedule and operational standards. The answer was yes, and dredging resumed in 2011 and continued in 2012.

Although GE was strongly opposed to the project, the company has done a first rate job carrying it out. For example, EPA had set a target of 350,000 cubic yards of sediment to be removed during the 2012 dredging season (mid-May to late October); GE nearly doubled that, removing 663,000 cubic yards. Nonetheless, this blistering pace, all key protective indicators (such as the amount of resuspension of contaminated sediment back into the river) remained well within the stringent limits set by EPA. In fact, recontamination has been minimal and has had negligible impact.

The decision to dredge the Hudson will have implications far beyond the banks of this historic river. Lakes, rivers and harbors throughout the world are similarly contaminated with PCBs, dioxin, organic chemicals and toxic heavy metals. Concerned people everywhere are watching with keen interest to see how the Hudson River cleanup proceeds. And today, with over half the project completed, the answer is that it is proceeding incredibly well.

For more information about this important project, visit EPA’s Hudson River web site at http://www.epa.gov/hudson.

Quality of Life Performance Standards were designed for the dredging project to keep the impacts on people to a minimum. The project’s affects on air quality are closely monitored. Air monitors have been placed around all of the dredge operations and in residential and commercial areas, and air quality data is collected daily.

Workers use excavators with environmental clamshell buckets mounted on flat, anchored platforms to dredge the river. The PCB-contaminated sediment is emptied onto 35-foot-wide, 195-foot-long floating barges. Tugboats are used to move barges of contaminated sediment to an upstream processing facility to dredge the river. The barges may make as many as 20 one-way trips to and from the processing facility during a 24-hour period.

The project’s effect on water quality is closely monitored in accordance with Engineering Performance Standards. Water monitoring is done around and downstream of the dredges, to determine PCB resuspension levels. This water monitoring buoy is solar powered.

Tugboats are used to move barges of contaminated sediment to an upstream processing facility and clean backfill to the previously dredged areas. The tugboat and barge must navigate through the lock system to get to the processing facility. Quality of Life Performance Standards were designed for the dredging project to keep the impacts on people to a minimum. The project’s affects on air quality are closely monitored. Air monitors have been placed around all of the dredge operations and in residential and commercial areas, and air quality data is collected daily.

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The Issue of Septic Tanks
Are We Achieving Progress At Last?

By Donal Daly

The Issue?
• There are approximately 500,000 domestic wastewater treatment systems (DWWTSs) in Ireland, mostly septic tanks, which discharge about 46 million gallons of effluent per day into the ground. The threat to human health and the environment can be illustrated by two facts: i) effluent contains about 1 million faecal bacteria per litre and each of us produces around 150 litres of effluent each day (the drinking water standard is zero); and ii) each of us produces 0.5 kg of phosphorus each year and if this gets directly into surface water, it would pollute 14 million litres (3 million gallons).
• DWWTSs installed, constructed and installed in accordance with best practice guidance generally provides adequate treatment for disposal of domestic waste water.
• However, a significant proportion of the country – in the range 40-50% – has hydrogeological characteristics that can be problematical, mainly because of inadequate percolation but also because of inadequate purification in the subsoil. Inadequate percolation means ponding, smells and the likelihood of children and pets coming in contact with microbial pathogens. It can also result in pollution due to piping of effluent directly into ditches and streams. Inadequate purification before the effluent enters groundwater can mean that wells, particularly private wells, become polluted with pathogens.
• In addition, many systems were not located or constructed, and have not been maintained, in accordance with the current best practice.
• Many house owners in rural areas were not fully aware of the problems and risks arising from their DWWTSs.

Consequence 1: Potentially, we have significant health and environmental issues, although it should be kept in mind that urban wastewater treatment plants and agriculture produce a far higher pollutant loading than DWWTSs.

Consequence 2: The European Court of Justice (ECJ) ruled against Ireland and imposed fines.

What Have We Done In Response?
• The Water Services (Amendment) Act, 2012 (S.I. No. 2 of 2012), was passed by the Oireachtas in February 2012. This requires home owners connected to a DWWTS to register and ensure that the system does not constitute a risk to human health or the environment.
• Water Services Authorities (Local Authorities) are required to undertake inspections to regulate the discharges from DWWTSs.
• The Environmental Protection Agency (EPA) has developed a National Inspection Plan (NIP) – this can be downloaded from the EPA website www.epa.ie.

What Does the National Inspection Plan Entail?
• It is based on two strands; i) a citizen engagement strategy, and ii) a risk based approach to inspections, whereby the level of inspection will be proportionate to the risk posed to human health and the environment.
• A national public awareness campaign is commencing to enable householders to understand how their DWWTS functions, how their own DWWTS can pose a threat to human health and water quality, and what they can do about it. Short animated videos on What you can do to maintain your wastewater treatment system and What to expect from an inspection are available on the EPA website.
• We are fortunate in Ireland that the Geological Survey of Ireland, Teagasc and the EPA have produced geoscientific maps (soils, bedrock, subsoils, vulnerability, etc.) that enable an understanding of ponding, runoff, percolation rates and impacts from DWWTSs. These maps have been used as the basis for an EPA Report “A Risk Based Methodology to Assist in the Regulation of Domestic Waste Water Treatment Systems”, which is available on the EPA website. The risk methodology was used to determine the potential risk posed by DWWTSs all over Ireland; four categories are used – low, moderate, high and very high. These are shown on Map 1.
• In evaluating the risk and deciding on the inspection strategy, account is also taken of the catchment areas of sensitive receptors, such as bathing waters and groundwater drinking water supplies.
• The outcome is an allocation of inspections to different areas, based on the level of risk posed to human health and water.

So, Will We Achieve Progress?
Undoubtedly, ‘yes’ in my view. Why?
• There is now a far greater awareness and knowledge among people in rural Ireland of the health and environmental concerns arising from DWWTSs, and this awareness is increasing. And, as most people feel responsible for their local environment and for their own actions, improvements will be made irrespective of the threat of inspections.
• The inspections are an additional incentive to ensure that, for instance, DWWTSs are desludged regularly and the system is maintained so as not to have detrimental impacts.
• The inspections themselves are based on scientific analysis that ensures that greater numbers occur where the threat to human health and the environment is greatest, thereby helping ensure that problems in these areas are dealt with.
• Undeniably, there are many existing systems that have not been located, designed and maintained to the specifications of current best practices, and dealing with these will be difficult. Mitigation measures will be needed to enable improvements to be made. Currently, the EPA is funding research to help provide solutions.
• Matt Murphy recently reminded me that I gave a paper and presentation at the Sherkin Island Marine Research Station Conference in 1990 on the problems posed by septic tanks and on the need for change, and of a second paper “Disposal of Wastewater from Houses in Unsewered Areas –Problems and Solutions” to the 2003 Conference. For the first time in almost 30 years, I feel optimistic that what was, in the past, an untalked of and uncomfortable issue in many people’s back gardens, is now being dealt with.

Donal Daly, Manager, Hydrometric and Groundwater Programme, Environmental Protection Agency, Richview, Clonskeagh, Dublin 14. www.epa.ie
By Matthew Jebb

On the 26th April 2013, Nobel laureate Jim Watson was at the National Botanic Gardens in Dublin to inaugurate a remarkable piece of sculpture – ‘What is Life?’. The occasion was the 60th anniversary of the publication of his paper, with Francis Crick, on the structure of the DNA Double Helix. Watson, at the age of 86 is still actively involved in medical research, and in his lifetime he has not only solved what Charles Darwin began, but lived to see it grow into a multi-trillion dollar industry employing tens of millions of people worldwide. The sculpture – a gift to the people of Ireland – is a public celebration of Irish science, and a tour de force of our understanding of the world of nucleic acids as it stands today. The discovery of the double helix can rightfully claim to be one of the most important scientific breakthroughs of the 20th century, and has a remarkable Irish dimension. All three Nobel laureates – Watson, Crick and Wilkins – credit the work of Charles Jencks, a landscape architect, and is also co-founder of Maggie Cancer Caring Centres. He delights in researching a subject deeply and his art and science that restores the pursuit of ‘natural philosophy’ so beloved of Schrödinger. Whether it is cell division, how to interpret them, the atomic structure of molecules themselves.

In 1939, the then Taoiseach of Ireland, Éamon de Valera, invited the Austrian physicist and Nobel Prize laureate Jim Watson was at the National Botanic Gardens in Dublin. It was inaugurated on the occasion of the 60th anniversary of the publication of Jim Watson’s paper, with Francis Crick, on the structure of the DNA Double Helix.

The sculpture and earthform – a gift to the people of Ireland and a public celebration of Irish science.

The ?What is Life? sculpture at the National Botanic Gardens in Dublin. It was inaugurated on the occasion of the 60th anniversary of the publication of Jim Watson’s paper, with Francis Crick, on the structure of the DNA Double Helix.

?What is Life? from left to right: Minister of state for the Office of Public Works Brian Hayes TD, Charles Jencks, Jim Watson and Gardens Director Matthew Jebb at the inauguration of the sculpture ‘What is Life?’

The Irish strand in DNA

During his visit to Dublin, Watson acknowledged that between 1953 and 1955 the structure of DNA was a scientific discovery ripe for the picking. He emphasised the importance of the Irish links, notably that of the Tipperary-born physicist John Desmond Bernal (1901-1971). Without Bernal’s vital advances in X-ray crystallography, Watson said, it could have taken a further 20 to 30 years before the event took place. What Bernal achieved in the 1920s was none other than the first glimpses of the world of molecular structure that underlies living things. He perfected the means by which diffraction photographs could be taken of molecules, revealing, if you knew how to interpret them, the atomic structure of molecules themselves.

School Prize winners

At the Sunday event, Mary O’Donovan, Director of the West Cork Education Centre, announced the winners of a school essay competition on the roles of RNA and DNA. The J.D. Watson and J.F. Atkins Science Competition had been launched in February, with the challenge to submit an essay/poem illustrating the story of DNA and RNA. Students from all class levels at Post and Primary level had been received from across the country.

The post-primary school winners were Niamh Maher of St. Angela’s secondary school, Waterford, and Eabha Wall of Coláiste na Toibh bite, Bandon. The Primary school winner was Milly Smith of Our Lady of Mercy National School, Bantry, while Cormac Farrelly of Rowandale Integrated School Armagh received an Honourable mention. The winners received €500 each, and a copy of J.D. Watson’s book ‘The Annotated and Illustrated Double Helix’ from Dr Watson himself. The essay competition will appear on the website shortly.

The Irish strand in DNA

During his visit to Dublin, Watson acknowledged that between 1953 and 1955 the structure of DNA was a scientific discovery ripe for the picking. He emphasised the importance of the Irish links, notably that of the Tipperary-born physicist John Desmond Bernal (1901-1971). Without Bernal’s vital advances in X-ray crystallography, Watson said, it could have taken a further 20 to 30 years before the event took place. What Bernal achieved in the 1920s was none other than the first glimpses of the world of molecular structure that underlies living things. He perfected the means by which diffraction photographs could be taken of molecules, revealing, if you knew how to interpret them, the atomic structure of molecules themselves.
Morton, Ulster Museum. (end of article)
The Flora of County Fermanagh

A Review by Tony O’Mahony

The Ulster county of Fermanagh is situated in the northwest of Northern Ireland, and the northwest of Ireland. Although landlocked, Fermanagh is positioned close to the western (Atlantic) seaboard of Ireland, its habitats and flora thus mirroring this extreme oceanic influence. Some 30% of the county consists of freshwater habitat (dominated by the stunningly beautiful island-studded ecosystem of Upper Lough Erne and Lower Lough Erne, which form the ‘spine’ of the county), with a further 10% of habitat given over to commercial, coniferous afforestation. Arable farming (and its associated annual flora) is, today, virtually non-existent in the county, resulting in the fortunate retention of important habitats (such as species-rich hay-meadows, limestone pastures and wetlands) that are now in rapid decline elsewhere in Ireland. Pot-holers and speleologists have long explored the subterranean wonders of the famous Carboniferous Lime-stone terrain of Fermanagh (which represents an inland intrusion of the Ben Bulbin limestones further west, in counties Sligo and Leitrim), while its attendant, species-rich, calcicoles flora is a lodgestone for botanists.

The authors’ intensive tetrad-recording (2 x 2 km squares) of the flora during the period 1975-2010 (coupled with comprehensive data derived from a range of ecological studies undertaken by the Department of the Environment, Northern Ireland, within this time period) has established that close to 1,200 plant taxa (species, subspecies, hybrids and varieties) have been recorded in the county to date, though not all are currently present. Moreover, further finds are likely, given that the authors’ candidly admit that critical taxa (i.e. certain genera, species, subspecies, and varieties) have not been hybridized, and they extend an open invitation to experts in these critical groups to visit the county, and thus help to redress this situation.

The initial fifteen chapters (pages 17-181) cover such local topics as climate, soils, agriculture, native woodlands & commercial forestry; wetland habitats, and conservation. In stark contrast, Chapter 7: Vegetation History of Post-Glacial Ireland and the Origin and Immigration of the Flora, is much more expansive in scope, and provides an all-Island botanical-historical overview of intriguing interest. Chapter 10: A Botanist’s Guide to Co. Fermanagh, and Chapter 11: Habitat Gallery (both chapters augmented with beautiful, evocative habitat photographs), serve up a mouth-watering menu of delights for the reader, enough to instil an irresistible urge to visit Fermanagh and experience its habitats and flora firsthand. (Most regretfully, the meagre, remnant, indigenous flora of the denatured pasturelands of Munster (with their large dairy-herds), pales in comparison to the native richness of the Fermanagh Flora, in which latter county there is no history of large-scale industrial development and, consequently, none of the attendant despoliation of the environment.)

The discursive species-accounts (pages 195-768) are solely the work of Ralph Forbes, and represent the ‘meat’ of the book. (Note: In order to accommodate this user-friendly format, the authors’ have chosen to publish the mass of individual Fermanagh records – some 243,000 entries – in a supporting website that will be continuously upgraded in the years’ ahead.) These species-accounts provide a vast amount of useful and fascinating information: an eclectic mix of distributional data (local, regional, nation, interna- tional); etymological, biological, ecological, herbal and plant-toxin notes; as well as speculative debate on the status (i.e. native or adventive) of certain species. All the more bugging, then, to find that the author has either overlooked, or has chosen not to utilise, the considerable body of relevant data (distributional and taxonomic) to be found in the BSBI regional journal, Irish Botanical News (volumes 1-20; 1991-2010), which provide far more up-to-date all-Ireland coverage of plant taxa, than is available in the present work!

In conclusion, The Flora of County Fermanagh is a mighty tome, a beautiful book, and a magnificent achievement; a flora to be perused on a regular basis, both for sheer enjoyment and for knowledge. All who have helped to bring this wonderful work to fruition are to be heartily congratulated. It has certainly raised the bar for future florists-writers, both in Ireland and further afield.

The Wild Flowers of Loophead, County Clare, Ireland

By Carmel T. Madigan www.carmelmadiganflora.com

ISBN: 978 0 9572127 0 1 Price: €31.50. (STG £25.00)

The Water Newsletter published by the Geological Survey of Ireland (GSI) is primarily for Irish practitioners. However, it is equally of value to the ordinary person. Clean water is vital to all of us so we should be very concerned with the issues ef- fecting any pollution of groundwater. If people were educated in how septic tanks, farm effluent and wastewater discharge could pollute groundwater they would welcome inspections and other regulations.

Issue 50 has over 20 articles outlining Irish, US, Scottish and Australian regulatory and management experiences, as well as insights from a local authority’s “real face” perspec- tive. Donal Daily of the EPA, in his paper “Water/Groundwater – Challenges and Questions for the Future – A Personal View” covers such issues as complacency and ignorance, world pop- ulation growth, and how water is becoming the New Oil. Donal founded this newsletter in 1996 and was editor for many years when he was at GSI.

In another paper of interest “Progression in groundwater protection and management – A Local Authority Perspective”, one learns 48% of Westminster’s drinking water comes from groundwater sources in two major aquifers. These are facing pressures from the high-intensity agriculture sector and the large number (27,30,000) one-off houses, each with their own water treatment systems.

This newsletter is available online at http://www.gsi.ie/Pro- grammes/Groundwater/Groundwater-Newsletter.htm. It’s a most important newsletter on a vital environmental issue which affects everyone. Do read it.

Matt Murphy
In 1989 the space probe Galileo surveyed Europa, one of Jupiter's moons, and found it to be covered in a sheet of ice. While the smoothness of the ice surface suggests that an ocean exists below it, nobody knows for sure if it is solid right the way through to the moon’s surface or if it is simply a thin sheet covering a hidden sea – just the ice at our planet's own North Pole covers the ocean below.

So far, no probes have actually landed on Europa but in 2022 the European Space Agency plans to launch JUICE – the Jupiter Icy Moon Explorer – to see if an alien ocean exists there.

Could it be, if JUICE is successful, that in some future mission to Europa, a specially adapted remotely operated vehicle like the Holland 1 will penetrate that moon’s ice sheet into the ocean below?

And if it does, and if ‘Black Smokers’ exist there as they do on Earth, will the first extra-terrestrial life we encounter in ‘outer space’ be a version of that which already exists in the ‘inner space’ of our deep oceans back here on our home planet?

Life in Inner Space...

In August 2011 the Marine Institute’s deepwater remotely operated vehicle (ROV) Holland 1 descended from the research vessel RV Celtic Explorer to a depth of three kilometres to film a field of ‘black smokers’ along the Mid-Atlantic Ridge. The expedition was led by University College Cork and filmed for the National Geographic Society’s TV series Alien Deep.

Up until just over a hundred years ago, the view of science was that life could not exist in the deep oceans where sunlight could not penetrate. However, the area around the black smokers was teeming with life - from deepwater crabs and one-eyed shrimps that can ‘see’ heat in infrared to filter feeding worms and clams – not only in total darkness and tremendous pressure, but also at temperatures close to boiling point.

‘Black smokers’ are formed when cracks in the seabed around geological faults, such as the Mid-Atlantic Ridge, allow seawater to reach red hot volcanic material from the Earth’s core. The resulting hot water, saturated with minerals, boils to the surface of the seabed in black, smoke-like clouds of copper, zinc, gold, iron and other minerals, creating a unique environment of towering ‘chimneys’ which derives its energy not from sunlight, but from heat. Bacteria, which feed on minerals, form a slime that in turn is food for filter-feeding worms and molluscs. These larger animals in turn are food for deepwater crabs, fish, octopi and squid creating an entire alien ecosystem in super-heated, darkness.

by John Joyce

For more Fun Facts check out www.spindriftpress.com

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Learn about birds with BirdWatch Ireland

Feeding Wild Birds Leaflet
Download this leaflet from the Learn about Birds section on BirdWatch Ireland’s website at www.birdwatchireland.ie

Learn how to identify the birds in your garden with our Free Garden Bird Charts. Send a SAE to: BirdWatch Ireland, P.O. Box 12, Greystones, Co. Wicklow.

BirdWatch Ireland has over 10,000 members and has branches throughout the country which organise events and outings in your area. Why not get your school to join? Write to us or visit our website for details: www.birdwatchireland.ie

BirdWatch Ireland has two educational web sites, catering for learning about birds in schools.

Visit the Working with Birds web site to learn about watching and feeding birds
Simply go to www.birdwatchireland.ie and go to the ‘learn about birds’ section
BirdWatch Ireland, P.O. Box 12, Greystones, Co. Wicklow. Tel: 01-2819878 Fax: 01-2819763 Email: info@birdwatchireland.ie

Website: www.birdwatchireland.ie

Birds & Weather

Investigate the effects weather has on how much birds eat.

PART 2
By BirdWatch Ireland

Does the temperature outside affect how often birds feed?

What to do:
• Put out the same kind of food regularly, for at least two weeks (You will probably be doing this anyway).
• Count the number of visits that birds make to the food during a particular time (between five and fifteen minutes).
• Do this at the same time each day.
• Each time you count the visits, measure and record the temperature outside.
• Using the information you have gathered, show your observations on a graph.

Here is an example:

How do changes in the temperature affect the number of visits by birds to the food that you have put out?

Conclusions
• Do birds come for food more often in colder weather?
• Can you think of a reason for this?
• Do birds look larger in cold weather because they eat more, or is it for some other reason?
• What have you discovered about the importance of food for their survival?

Warning: Avoid giving salted peanuts and dessicated (dried) coconut as these might harm the birds.

Conclusions
• What food does each bird like most and least?
• Is any food an all-round favourite?
• Is there food that no birds like?
• What must be done to attract a variety of birds to come to feed?

From your results, make up a chart to help you find out what they eat the most.

An ideal gift!

Discover the magic of birds with your DVD Guide to ‘Common & Garden Birds’ – FREE when you join BirWatch Ireland

Join now:
• by post (see form below)
• by telephone – simply call 01-2819878
• online at www.birdwatchireland.ie
**Quiz**

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. It might be old fashioned, slow to start up and need new programs but someone else might think it’s the best thing ever!</td>
<td></td>
</tr>
<tr>
<td>2. These could help someone else see things as clearly as you.</td>
<td></td>
</tr>
<tr>
<td>3. Anything with a plug can be recycled. This one helps to make your tea.</td>
<td></td>
</tr>
<tr>
<td>4. These might also be old-fashioned but someone else might like the vintage look.</td>
<td></td>
</tr>
<tr>
<td>5. It is read every day but then it is “old news”. Remember it can be changed back into something new.</td>
<td></td>
</tr>
<tr>
<td>6. They get smarter and smarter every year and we replace them now and then so we can talk and text more often!</td>
<td></td>
</tr>
<tr>
<td>7. If you printed this page, you might run out of one colour. Many of these can be refilled.</td>
<td></td>
</tr>
<tr>
<td>8. Though some are now read digitally, others are printed on paper and keep on the shelf. Can someone else enjoy it after you?</td>
<td></td>
</tr>
<tr>
<td>9. A flat one may prevent the car from starting or stop the clock, but many can be recharged.</td>
<td></td>
</tr>
<tr>
<td>10. You can store food and drink in it and look through it, but when it breaks, it is of no use, until it is recycled.</td>
<td></td>
</tr>
<tr>
<td>11. It takes hundreds and thousands of years to decompose but if recycled it can be made into such things as bags, bins, bottles and garden furniture.</td>
<td></td>
</tr>
<tr>
<td>12. As you get older, you play with them less. Maybe someone else would like to play with them too?</td>
<td></td>
</tr>
</tbody>
</table>

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**Reduce, Reuse, Recycle!**

These pictures are the solutions to our "Reduce, Reuse & Recycle" quiz above. You can colour them in and as you do, can you identify similar items around you home and how they may be reused or recycled when you no longer need them? Each item is also found in the wordsearch below.

---

**Wordsearch**

All these “Reduce, Reuse & Recycle” words can be found in the wordsearch. Can you find them? They can read up or down, back to front or diagonally. Answers on page 29.
A Race to Reuse & Recycle!

New Publication! See page 6

Sherkin Island Marine Station

PUBLICATIONS

A Beginner's Guide to Ireland’s Wild Flowers
With the help of this pocket-sized guide, you will be able to do just that. Beginners of all ages will be introduced to the many common wild flowers found around Ireland. ISBN: 978-1-870492-22-0 PB 144mm x 100mm (208pp) €7.50 (plus postage €1.00)

A Beginner's Guide to Ireland's Seashore
A pocket-sized guide, suitable for beginners of all ages. With the help of this book you will be able to explore the wonders of marine life on the shores around Ireland. ISBN: 978-1-870492-86-2 PB 144mm x 100mm (208pp) €7.00 (plus postage €1.00)

The Natural History of Sherkin Island
This illustrated publication brings together 20 years of floristic data from the islands of Roaringwater Bay, S.W. Cork. A total of 530 flowering plants, conifers and ferns have been recorded on these islands. ISBN: 978-1-870492-84-8 PB 130mm x 193mm (160pp) €14.00 (plus postage €5.00)

The Wild Plants of Sherkin, Cape Clear and adjacent Islands of West Cork
This illustrated publication brings together 20 years of floristic data from the islands of Roaringwater Bay, S.W. Cork, Ireland. A total of 530 flowering plants, conifers and ferns have been recorded on these islands. ISBN: 978-1-870492-82-4 PB 130mm x 193mm (160pp) €6.00 special offer (plus postage €3.00)

Supplement
Supplement to A Beginner's Guide to Ireland's Wild Flowers and Ireland's Seashore.

An A to Z of Geology
This book explores the fascinating world of rocks and geology – a world of volcanoes, tsunamis, earthquakes, diamonds, gold and even dinosaurs! Contains information specific to Ireland. ISBN: 978-1-870492-01-2 PB 140mm x 100mm (160pp) €5.99 (plus postage €1.00)

Ireland's Hidden Depths
Explore, with nature photographer and author Paul Kay, the beautiful, intriguing and fascinating creatures that can be found in the shallow waters around Ireland's coast. ISBN: 978-1-870492-80-5 A4 SB 24pp €5.00 (plus postage €3.00)

Ireland’s Bird Life
A World of Beauty contains photographs from the vast collection of Richard Mills, one of Europe’s finest photographers. The book contains 200 colour photographs from his vast collection. ISBN: 978-1-870492-35-6 SB 140mm x 100mm (208pp) €7.50 (plus postage €1.00)

Ireland’s Seashore
This book explores the fascinating world of rocks and geology – a world of volcanoes, tsunamis, earthquakes, diamonds, gold and even dinosaurs! Contains information specific to Ireland. ISBN: 978-1-870492-96-6 SB 140mm x 100mm (208pp) €7.50 (plus postage €1.00)

Rechargeable batteries are capable of being reused nearly 500 times. 99% of the energy used to produce aluminium from raw material, is saved when a can is recycled.

Using rechargeable batteries and recycling aluminium cans produces less waste. Rechargeable batteries and recycling aluminium from raw material, is saved when a can is recycled.

This game is for two players. You will need a marker each and a dice. Decide beforehand who will be the rechargeable batteries and who will be the refillable ink cartridge. Each of you throws the dice in turn, moving the required number of spaces. If you are the rechargeable batteries and you land on batteries then you move forward 3 spaces. However, if you land on an ink cartridge you go back 2 spaces. If you are the refillable ink cartridge and you land on an ink cartridge then you move forward 3 spaces. However, if you land on batteries you move back 2 spaces. If either of you lands on a rubbish bin, then you miss a turn. The first player to reach the "Reduce, Reuse & Recycle" logo wins!
By Karl McCabe

IN December 2012 I went down to a small village in Tipperary called Cloughjordan, I am currently taking part in the Gaisce award, of which I am hoping to attain my Gold award by the end of this academic year. One part of the Gold Gaisce award is a ‘residential project’. I found out about Cloughjordan Cookery School through my PAL (President’s Award Leader). I met with the owners of the beautiful country house as soon as I got off the train from Dublin; I was greeted and introduced to the Cloughjordan team who were all so friendly. As part of this residential project I stayed in the B&B for a week, which was also part of the cookery school, and took part in several activities.

The first day I helped out in the cookery school and as the week went on I started to get a lot more involved in the farming part of the school. In Cloughjordan Cookery School, whether you are taking part in the cookery school or even staying in the B&B, one main aspect that you are immediately shown, is where all your food comes from. I think that was a huge drive within the cookery school - that, not only do you learn how to cook such brilliant dishes, you learn about where all your food comes from by visiting the farm and seeing all of the vegetables and animals in their most natural form.

Half way through the week, I joined one of the many transition year schools that take part in the cookery school to visit a nearby ‘Eco-village’. The whole drive of this ‘eco-friendly’ village was to create a sustainable and self-sufficient village, within a village; all produce and food for the village were grown on their own farms, milk was made from their own cows and even their heating system is all shared through a network of boilers and insulated pipes. The designs of all the houses were monitored by specific requirements of CO₂ emissions and heating needs; a network of farms produced all of the required nutrients for the residents and a ‘solar panel’ farm stored electricity for the village as well.

Doing my residential project in Cloughjordan Cookery School showed me and taught me so much about the food I eat, how to cook the food and even about what is happening and what can be done to protect the world we live in. I would like to thank Mr and Mrs Baker for their fantastic hospitality in Cloughjordan. For information on Gaisce - The President’s Award see www.gaisce.ie
Stay Safe on the Surf

Basic Surfing Etiquette

1. Be able to swim.
2. Get proper instruction at an ISA Approved Surf School or Club.
3. Check local knowledge with lifeguards or experienced surfers.
4. Study the waves and only go out if you are capable in the conditions which prevail. Stick to beaches until you are experienced. Do not be over-confident.
5. Learn to observe the coast to identify rips, wind change and other hazards. If caught in a rip always paddle away from the coast to safety.
6. Never go out at night when darkness is approaching.
7. When you “nip-out” do not come to the surface too soon, protect your head with your arm as you come to the surface. Wear a safety helmet.
8. Check your equipment, especially your leash. Remember to flush the waves to ensure a brightly colored board and you look at sea in the event of you requiring rescue.
10. Check the weather and tides before you paddle out. Spring high tides can make entering and exiting the water dangerous.
11. Advise someone ashore where you are going and when you will be back.
12. Have respect for other surf users and don’t be afraid to ask for advice.
13. Don’t be a hazard to swimmers or other water users. Always check behind you for other water users beforewhipping your surfboard to do a reverse wave.
14. If you find yourself in difficulty stay calm, do not discard your board, wave your arms in the air to attract attention and shout for help. Do not panic, help will come.

Irish Water Safety
www.iws.ie  www.isasurf.ie
PROMOTING YOUR SAFETY
In an Emergency Dial: 112 or 999
Ocean Warming & Fish Stocks

By Mike Ludwig

GLOBAL Climate Change may still be doubted by a significant sector of the public but fishery resources appear to be feeling it and responding to the changes. The distribution of harvested fish species and the productivity of supporting marine ecosystems are being influenced by ocean warming. Were that the only problem created by Global Climate Change our reliance on the Ocean's bounty would be difficult but ocean warming has an even more dangerous attribute; ocean acidification.

Ocean acidification is the on-going increase in the acid level (pH) of the oceans. It is caused by absorption and accumulation of carbon dioxide (CO₂). These two ocean warming attributes may compound each other making resource distribution impacts difficult for aquatic species, particularly those with shells. But, do not blame the climate, solely, for declining fish populations, overfishing, pollution, and habitat degradation remain major problems.

Our problem is that many of the fisheries responses are unlikely to benefit mankind. For instance, about half of 36 Northwest Atlantic commercially or ecologically important fish stocks recently assessed by the regional Marine Fisheries Service, including Atlantic cod, haddock, yellowtail and winter flounder are moving northward; into deeper water; or shrinking their range. And, ocean warming is affecting fish survival by altering food availability.

In the North Sea, larval cod and other finfish species depend on plankton during their early life stages. Shifts in their food availability are reducing survival and growth to maturity. Research has revealed that plankton communities, including fish larvae, are very sensitive to environmental changes. The hope is that fish and planktonic communities will adapt to the climate changes.

Complicating the problems of adaption to warmer waters is the acidification of those waters. Marine organisms collect calcium for shells and bones from seawater. As the oceans become more acidic, it is harder for species to collect and retain the needed calcium. This results in declining invertebrate populations which provide finfish food sources. Similarly, commercial sea food farming is becoming more difficult as both food sources decline and shell production becomes more difficult. Again, can these species adapt to the change?

These conversions mean managing, hunting and harvesting aquatic species is becoming more complicated. Just the northward movement could deplete US fish stocks under our management. Would Canadians, already suffering from collapsed stocks, entertain American fishing in their waters? Similarly, traditional fisheries around Ireland and the UK are relocating to areas along the Scandinavian coasts. Will the EU respond positively and will coastal fishermen purchase vessels to pursue the relocated stocks? The negative impacts of the changing environment include, also, the redirection of funding away from attempts to restore coastal finfish. After 45 years of effort and millions of dollars, the Connecticut River Atlantic Salmon Restoration Program has been deemed unlikely to achieve its objectives. Fortunately, counteracting these resource losses is the influx of many southern species into the abandoned habitats. The questions are: 1) are the newcomers usable and 2) how large a population will develop?

If that was not enough bad news, Norwegians report that by 2050, global warming will limit the oceans ability to hold oxygen and thus, reduce fish growth potential. The research indicates that for 600 marine species the average maximum body weights could decline fourteen to twenty-four percent as water temperatures increase. (As water warms it holds progressively less oxygen.) Fishing farther from home waters for fewer fish with a smaller size is not a scenario anyone wants to experience. The worst news is that smaller fish produce fewer young!

But not all the findings are negative. There were boosts for fisheries; seabass populations off the coast of the South West UK and Southern Wales have quadrupled since 1985 and squid are becoming more abundant in the northern North Sea. Elsewhere, while Northern (American) lobster is abandoning the waters south of Cape Cod, their population is exploding in the waters off Maine and the Canadian Maritimes. Unfortunately, this had led to a crash in the value of lobster and friction between Canadian and American fishermen as they land more and more lobster and receive less and less money per pound to cover the costs of fishing.

Finally, even Mother Nature is seeing undesirable changes from ocean warming. Studies reveal that global warming contributed to a nine percent decline in the number of seabirds breeding in the UK between 2000 and 2008. This was accompanied by a drop in their breeding success as well. Adults have to hunt farther from nesting sites, obtaining less food, leaving their young undernourished and exposed to increased predation from those harvesting the young from unprotected nests.

In the current Journal of Ecology a list of pressing ecological questions is presented. Number 82 asks “In the face of rapid environmental change, what determines whether species adapt, shift their ranges or go extinct?” Good question.

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