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The Realisation of a Dream
Editorial

By Matt Murphy

THE recently published Environmental Protection Agency report 2008 provides an integrated assessment of the overall quality of Ireland’s environment. It details the pressure on it and the issues necessary to protect it. This is only the fourth State of Environment report since the establishment of the EPA - the last was in 2004. The Director General Dr. Mary Kelly states: “despite successes to date however much more focus and progress is needed to address the pressing environmental challenge that this report has identified for Ireland in the coming years.” The report addresses the main issues, which are continually being debated in the media and elsewhere such as climate change and air quality, the Water Framework Directive and Waste. However one issue that rarely if ever has made “the headlines” is Ireland’s soil. Yet on reading this section it is difficult to understand why there has been such gross neglect in understanding the importance of our soil’s quality and its essential functions.

In this country, we have failed to give soil the same concern as other environmental issues. It provides the foundation for life in terrestrial ecosystems. Soil is the growing medium for food, forage crops, fibre, energy crops and timber. It stores nutrients and water for crops and provides anchorage for root growth. Soil regulates and controls water flow over land and filters rainfall passing through the soil to plants and groundwater. Soil influences river flows, flooding and recharge to groundwater. Soil provides the first layer of protection from pollutants that arise on the land surface. The micro-organisms and minerals in soil filter, buffer, degrade, utilise, immobilise and detoxify large number of organic and inorganic materials, including slurry, industrial organic wastes and sewage sludge. Soil stores, transforms and cycles essential nutrients such as carbon, nitrogen, phosphorus, potassium and sulphur.

Soil also takes up, stores and releases atmospheric gases. Soil provides raw materials and foundation support for buildings and protects our archaeological and cultural remains.

The report lists a number of priority initiatives to protect soils including: to do so, protect water and air quality.

1. Soil data coverage of Ireland is incomplete and exists in many variable and disparate forms. Without a comprehensive national soil map and with all the associated soil physical and chemical data, tackling issues such as quantifying the extent of soil threats in Ireland, producing runoff risk and nutrient loss for soil to water will be extremely difficult.

2. A critical assessment of existing evidence about the state of Irish soil and the pressures that are currently affecting soil functions needs to be undertaken.

3. The requirement for a national soil quality-monitoring network that would take account of soils spatial variability, different land use and future risks needs to be evaluated.

4. A national framework plan for the management and remediation of contaminated soils in Ireland needs to be developed. Ireland lacks specific legislation for dealing with contaminated soil and the application of existing legislation is often difficult and piecemeal.

5. The regulation of the application of sewage sludge to land needs to be revisited. This must involve the local authorities that are responsible for the generation and treatment of sewage sludge and those at farm level, where sewage sludge is used in agriculture. An overall management system, that records and monitors the quantities produced, is needed.

The report on soil concludes as follows: “Our soil needs to be afforded the same protection as given to air and water. We need to know the state of our soils, and the pressures placed on them, evaluate the extent of soil degradation and respond to degradation processes in an informed and structured manner. We need to plan for the protection of soils to ensure that they can continue to perform the functions we require of them and to protect against the real risk from climate change. We cannot protect this intrinsically valuable national resource without the appropriate and essential information and understanding. We cannot achieve good water or air quality without knowing our soils and how they behave in relation to pressures placed on them. Our soils are our life... they are intrinsically connected to our water and air, and we must strive to protect them.”

One thing clear from this report is that there needs to be improvements in our knowledge of soil quality is for the sustaining of quality food production and for protection of our environment; we must give priority to changing this situation. The EPA must increase their funding of research in this area and at the same time continue to highlight the damage to our environment. Even this will not be sufficient unless bodies such as local authorities and farming organisations introduce educational programmes to help the general public to understand why care of Ireland’s soils is so vital to their future.

Matt Murphy, Director, Sherkin Island Marine Station, Sherkin Island, Co. Cork.

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ANTARCTICA
The Last Continent

By Oscar Merne

ANTARCTICA has held a fascination for me over the last fifty years, and finally I managed to get there in December 2008, albeit on a short trip to the Antarctic Peninsula. This quite narrow and mountainous peninsula extends northwards from Western Antarctica some 1,300 km towards the southern tip of South America and therefore is relatively easy to reach from the world’s most southerly city – Ushuaia, on the Beagle Channel, in the Argentinian part of Tierra del Fuego. This is where most visitors to Antarctica start their journey these days.

My wife and I spent three weeks travelling around in Argentina, from the steamy tropical north of the country at the Iguazu National Park and its awesome waterfalls to the cool temperate area around El Calafate, on the western edge of Patagonia and including Los Glaciares National Park and its famous Perito Moreno Glacier. Unfortunately, my wife, who is not a good sailor, could not be persuaded to face the often stormy crossing of the Drake Passage between Cape Horn and the Antarctic Peninsula. She joined an organised group at El Calafate and spent two weeks travelling south and exploring the magnificent landscapes of the southern Argentinian/Chilean Andes. In the meantime, I flew the 1,000 km from El Calafate to Ushuaia, and spent three days exploring the Beagle Channel and had breeding places for colonial seabirds and haul-outs for South American Sealion. The most numerous of the nesting seabirds were handsome black and white King Cormorants (also known as Blue-eyed Shags) which formed large, dense colonies on rounded tops or gentle slopes of many of the islands. Where there were low rock cliffs the red-faced, white-eared, black-necked Rock Cormorants nested on ledges, much as our European Shags do. I also saw a few Neotropic (or Olive-backed) Cormorants in the Beagle Channel, but there was no sign of any in the island colonies.

In attendance at the cormorant colonies there were always a few large brown skuas, on the lookout for opportunities to grab an unhatched egg. Later in the season they will also take and devour fluffy brown chicks. However, they are not entirely predatory: often they simply scavenge fish discarded by predators: often they simply scavenge fish discarded by...
Their inhabitants are a subject of almost universal ambush, earthworks, castles, motte and bailey modern churches both Catholic and Protestant crannogs, ring forts, hill forts, promontory forts. Archaeologist interested in the pre-Christian fields of research would interest you? A unique position to document local history not only as a matter of personal satisfaction but to provide the source material for future historical research by others. Why not study a parochial theme? Local history is by definition specialised - a specialised study of a particular district. Yet it provides a variety of study topics to suit particular local background knowledge, and their lifelong interest in their locality are in a unique position to document local history not only as a matter of personal satisfaction but to provide the source material for future historical research by others. Look around you - there's history everywhere! A study of topographical features can itself produce an amazing array of historical evidence. The historian - more correctly the archivist - interested in the pre-Christian period may find (depending on where he or she behind the public water supplies and drainage works, local building schemes and public housing programmes, the public works, the land reformation divisions, the hospitals and workhouses, the Courts, the police barracks, the prisons. Others will concentrate on the schools and convents and colleges in their areas. Industrial archaeo- logical remains are everywhere, perhaps now defunct. Even some hair salons retain a red and-white striped decor on their doorposts reasoning questions about the history of their trade. Yes history is all around us - you cannot escape - unless you haven't noticed. Take a walk along a road or street and ask of everything you meet - why? Find the answers and you will already have uncovered some of the secrets of your native place. How and where to start research A prospect of "oral enquiry, archival research and field work" might deter any would-be local historian, but rephrased as "talking to local, mainly old, inhabitants, reading up your subject in books and documents and visiting the actual sites of interest", it has a more manageable appearance. Here are a few signposts to point the appren- tice historian in the right direction. Documentary Sources In listing types of material available, include the following. Old and print Public records Local histories Old maps and prints Local libraries and archives Education Local folklore Old photographs Administrative History Local story Local depositories of archives in Ireland. Buildings Local history Architectural History Local history Law and order History Local hotels Land & Agriculture Traditions, trades and crafts Transport Local history Public Utilities Population Archaeological remains Religion Local history Openings for the History Around You
Research your subject sufficiently in advance to avoid burning your fingers which would be asked. Secure if possible an introduction from a mutual friend. Have the questions listed precisely on a discreet, small paper - not on a clip-board. When interviewing, do not, except in excep- tional cases, record the answers verbatim but tactfully jot down key words from the answers. Before leaving ask for names of other people who have related information. Finally, and most importantly, record the information in full immediately after the interview. Are you a member of the club? While many historians pursue their interest individually, most find it useful to link with others. Research has little end product unless it and the generation of other active and informed people seeking evidence on the ground of disused tracks and roads, searching for signs of aban- doned habitations and recording information from tombstones. Most of all, an organisation ensures a social dimension and provides a con- tact point for people of similar interests. Not surprising then has been the phenomenal growth in recent years in the number of local historical societies. Typical functions of an historical society While activities vary from area to area, most local history societies work on similar lines. Near to all societies organise lectures and outings, publish a news sheet, journal or series of papers, and hold displays and exhibitions. Some may erect plaques to mark locations of historic interest; some work to preserve historic monuments, buildings, sites and similar features. Many encourage local history projects in schools. Most do local historical research. Some societies, using the help of forfars or other agencies, carry out his- torical surveys and do restoration work. And some, particularly well organised groups, run a local heritage centre or museum. All activities seek to promote an interest in local history and an awareness of its importance to the local community. A role for the non-activist historian Not everyone aspires to join societies, desires to organise lectures, retire into public archives to pursue research. But any observant person cannot fail to amass a vast store of local knowl- edge, as years roll by. So if you have memories which you may down or communicate them to someone who will value them? But there are other things that an unattached historian can do by, for example, moulding pub- lic opinion, educating friends and neighbours and in particular urging local Councillors to adopt or continue enlightened policies on preservation of our physical heritage, reviving old placenames when naming new roads, retaining ancient street furniture, granite kerbs etc., maintaining Council archives, supporting local museums and so on. Depending on occupation, an historian may be presented with a local study to "prom- ote the cause". A few actual cases come immediately to mind: a teacher who has incul- cated a love of their area and its traditions in the younger generation; a librarian who has built up local archives; a parent who has rescued old documents of local historical interest when redundant records were being destroyed; a plumper who has assembled a collection of antique pumps, pipes and sanitary fittings which would otherwise have been destroyed. Or you could be a "contemporary local historian". Openings for the contemporary local historian Much of the valuable source material we use comes from records of local events compiled as they occurred, or from accounts describing conditions at the time of writing. Conversely much of the historian's frustration results when such reports are absent. By becom- ing a reporter of current events you may well be quoted in learned quarters and scholars will come when your name has begun to fade on your weathered tombstone! Here are some ideas. Why not keep a diary of local events and hap- penings as they occur, together with descriptions of various aspects of community life? Or keep a scrapbook, news cuttings, notices, circulars, election literature, posters and local publications. Many societies have rescued orabilia products of local (perhaps defunct) industries, local handcrafts. redundant signs etc. Teachers particularly are in an excellent posi- tion to play the role of local diarist and may be able to encourage their students to gather the information to be recorded. Camera enthusiasts could record local events and scenes, particu- larly subjects ignored by professional photographers. The recollections of residents with long memories could be recorded on audio or video equipment. Note the changing of contemporary life, and indeed records of research carried out into the past, will be of no lasting value if subsequently thrown out, or lost or destroyed. Always make provision for the safekeeping of all such material in suitable archives. Where to go for information For bibliographies related to your own local- ity or to the study of local history generally consult your local librarian. Your librarian will also be able to supply details of the major depositories of archives in Ireland. For additional address of value to local histori- ans, visit the "Publications" section of www.enfo.ie and view the leaflet "History Around You". From the ENFO leaflet "History Around You", ENFO – The Environmental Information Service, 17 St Andrew Street, Dublin 2, Ireland. Tel: (01) 888 3911 (01) 888 5191 Fax: (01) 888 3946 e-mail: info@enfo.ie or web site: http://www.enfo.ie. This is a reprint of a Resource Source leaflet prepared by Liam Clare, illustrated by Geoffry Johnson and produced originally by the Department of Environmental Studies, University College Dublin.
Brown Trout in Ireland

By Maurice O'Callaghan

A RECENT book published by the Central Fisheries Board provides one with a wonderful pictorial insight of one of Ireland’s most common indigenous fish, the brown trout. This publication was written by Dr. Martin O’Grady who has been involved for over 30 years in researching the ecology and biology of this species. Dr. O’Grady also draws on the experience of many other researchers, past and present, who have worked in different freshwater research fields in Ireland and elsewhere. Dr. O’Grady was ably assisted by two of his colleagues – Myles Kelly, a very capable wildlife artist and Shane O’Reilly, an experienced graphic artist. Together they have produced a terrific book embellished with many photographs of trout in their natural environment, wonderful graphics and many pictures of the trout’s environment. This publication will be of particular interest to anglers, environmentalists and teachers.

The book confirms that brown trout is one of very few native Irish freshwater fish species – during the last ice age, some 10,000 years ago, Ireland was frozen over. So when the thaw came and our rivers started to flow again, Ireland was an island at this point in time. Consequently the only fishes which could invade our river systems were those that could tolerate salt water as they swam from other European waters to colonise our waters – salmon, trout, eels, shad and pollan.

The author points out that trout are found in every catchment in Ireland. At this point in time there are even trout stocks in some parts of our canal systems. The key environmental factors which are required by trout are outlined and illustrated – clean water, loose gravels for spawning and nutrient rich waters which accommodate large populations of insects, crustaceans and snails, the trout’s favourite food items.

There is comprehensive coverage in this publication of the genetic studies of trout which have been carried out at home and abroad. It is noteworthy that the pigmentation (colour) patterns of individual trout reflect, to a significant extent, their genetic uniqueness. The author’s collection of Irish trout photographs in the book can leave no one in doubt as to the broad genetic base of Irish trout. The author stresses that geneticists in Ireland now regard all our brown trout as a “family of fishes” rather than an individual species.

Research clearly shows the “plasticity” of brown trout as a species. Remarkable variation has been recorded in relation to their lifespan, growth patterns, feeding habits and even the extent to which individual fish travel over their lifetime. All of these subjects are clearly documented with examples in this book.

There are hundreds of lakes in Ireland, yet, only a few of these could be regarded as high quality trout fisheries. The combination of ecological and biological factors required to create a quality brown trout lough fishery are outlined in detail.

This book examines the role of fish hatcheries in promoting brown trout stocks. The author’s researches clearly show that hatcheries have an important role to play in creating trout fisheries in ponds and lakes where there are few or no natural spawning streams in the catchment. Such waters need to be restocked regularly to maintain a population. Research has also shown that stocking trout into waters which already contain a substantial wild trout population is a waste of resources. This book contains a fascinating and detailed account of research programmes designed to establish these facts.

Over the last sixty years numerous land management practices, an expanding human population and the introduction of non native plant, invertibrate and fish species in Ireland have endangered wild trout habitats. Detail is provided of how these various factors have impinged on trout stocks.

The role of the Fisheries Boards in managing and conserving wild brown trout stocks is outlined. It is not all “doom and gloom”. This book illustrates the positive programmes which are in place to maintain and/or restore wild trout stocks. The reader will be fascinated by the sophisticated nature of current research programmes.

The book is a must for all environmentalists. It is available from the Central Fisheries Board for €30.00 including postage. Anyone seeking a copy should contact sandra.deyfe@ffi.ie

The array of colour patterns displayed by trout (see Lake Trout above), is, in part, a camouflage mechanism with individual fish adopting a specific colour pattern in a particular habitat which affords them some protection from predators. Colour patterns also reflect the genetic origin of the fish. Research has shown that pigmentation patterns on trout can be used to correctly identify 79% of individuals belonging to a particular genetic stock. The array of pigmentation patterns on wild Irish brown trout is very broad and probably, in part, reflects the wide genetic variation of these fishes. It is also a reflection of the diverse range of habitats which they have successfully colonised.

Extensive and detailed genetic studies of Irish brown trout have been pioneered by Professor Andy Ferguson and shows that three types of brown trout in Lough Melvin, which are visually different, are in fact genetically distinct. He suggests that they be re-classified and called Salmo ferox (Ferox), Salmo truitomachius (Gillaroo) and Salmo nigripinnis (Sonaghan).

The book contains a fascinating and detailed account of research programmes designed to establish these facts.
Castle & Horse Islands

JOHN AKEROYD

looks at two more islands in Roaringwater Bay.

In this series of articles I’ve described some of ‘Carbery’s Hundred Isles’ in West Cork. Over the last 20 years, with other biologists working at Sherkin Island Marine Station, I’ve been privileged to explore the remote, unpopulated and seldom visited islands in Roaringwater Bay. Castle Island has yielded some special plant finds, and has at least one plant found nowhere else in the area.

Horse Island has been a particular thrill, always a source of interesting plants, not least on one cold, damp late afternoon at the end of August 1992. In a patch of dry grass on shallow soil by a rock outcrop was a cluster of bright pink flowers – Deptford Pink (Dianthus armeria), a plant never before recorded in Ireland.

With Long Island and the smaller rocky Goat Island to the west, Castle and Horse are the most northerly islands in Roaringwater Bay. In fact they may all have once been one single island, as old chronicles tell of a cataclysmic storm in the 9th century that split apart the three main islands. This part of the Bay adjacent to the Mizen Head peninsula is often called Long Island Bay.

Both islands are for the most part low-lying, with Castle rising gently to just 36 m, Horse to 37 m. Castle is uninhabited today but has the rains of a settlement at the eastern end, together with the castle, a O’Mahony tower house. By the 1990s Horse, once populous, had only one resident household, and a substantial holiday home on the southern coast, but today supports a summer population in several restored cottages towards the western end. A handsome new pier makes the island accessible (note that Castle is under private ownership), whereas Castle is harder to reach and attracts few visitors at all.

Geologically both islands are of Upper Devonian age (350 million years ago), formed of the fine-grained purplish mudstones of the Castletownsend Formation that replaces the harder and slightly older Sherkin Formation of Sherkin and Cape Clear Island. Castle and Horse have a gentler, more softly rounded landscape than these larger islands. The soil, derived from eroding rocks and glacial drift, would have been fertile enough for cultivation, although much of Horse is clayey and waterlogged. The islands both have an extensive cover of scrub of gorse, willow, bramble and bracken, and on the north sides low, gullied cliffs imperceptibly covered by ivy, ferns and various taller plants.

Castle has some sheep-grazed pasture and, at the western end, heath and open rocky ground. The island’s two best plant areas are at the eastern and western ends. The shingle strand to the south of the castle has rare Sea Bindweed, and plants of disturbed or tilled ground, relics of the time when people lived here – Musk Stork’s-bill, Small Nettle, both rather scarce and scattered in the islands, and Good King Henry, at its only site in Co. Cork. This clump-forming perennial, related to beet and spinach and once widely eaten as a vegetable, also grows among nettles near the buildings. Rocky Atlantic heath at the western end of Castle is home to Spotted Rock-rose, a tiny yellow-flowered annual known on East Clare and Hare Island since the 1930s and found on Long in 1994. Now known from several places in Roaringwater Bay but discovered on Castle only in 1999, it is included in the Red Data Book of the most threatened Irish plants.

Horse Island (above) and Castle Island are the most northerly island in Roaringwater Bay. Cork City, by botanist Isaac Carroll (1828–80). Since 1993 the plant has persisted on Horse, with anything up to 100 plants being counted in a season, but Deptford Pink remains among the rarest and most threatened species in Ireland, still not protected by law. We need to keep an eye on these plants and look out for them elsewhere in Co. Cork.

Deptford Pink (Dianthus armeria). Home to Spotted Rock-rose, a tiny yellow-flowered annual known on East Clare and Hare Island since the 1930s and found on Long in 1994. Now known from several places in Roaringwater Bay but discovered on Castle only in 1999, it is included in the Red Data Book of the most threatened Irish plants.

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For, curiously, we were not the first on its trail. Shortly after we found the plant, I was checking folders of Dianthus specimens at the National History Museum in London. At the bottom of the pile, in a tatty old folder labelled “Ireland”, was a single specimen of Deptford Pink collected near The Ovens, not far from Cape Clear Island. Related to beef and spinach and once widely eaten as a vegetable, also grows among nettles near the buildings. Rocky Atlantic heath at the western end of Castle is home to Spotted Rock-rose, a tiny yellow-flowered annual known on East Clare and Hare Island since the 1930s and found on Long in 1994. Now known from several places in Roaringwater Bay but discovered on Castle only in 1999, it is included in the Red Data Book of the most threatened Irish plants.

Horse Island (above) and Castle Island are the most northerly island in Roaringwater Bay.

We're the most broadly based and diversified healthcare company in the world, manufacturing and marketing products in many companies, including consumer pharmaceuticals, vision care, medical devices and diagnostics. In Ireland, our group of companies includes ALZA, Canadian, DePuy, Johnson & Johnson Consumer, Johnson & Johnson Medical, Thermo Fisher and Vascular. The Johnson & Johnson family of companies will now be advertising our vacancies together, giving you an insight into the range of careers we can offer.

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**Groundwater in Ireland**

The Current Situation

By Donal Daly

**Context**

Groundwater may be hidden underground, but it is an important resource not only supplying one quarter of our drinking water supplies from wells and springs, but also providing a significant contribution to river flows in dry weather and acting as the critical contributor to many terrestrial ecosystems, such as fens and turloughs (see Figure 1). While it is less prone to pollution than surface water due to the protecting filtering layer of soil and subsoil that overlies the water table, it nonetheless is vulnerable in areas where the subsoils are thin, particularly in the karstic limestone areas. Unfortunately, little purification of pollutants occurs in Irish bedrock. Why? Irish rocks are ancient (more than 300 million years old generally); they have lost their original porosity due to the heat and pressure in the earth’s crust, and now water can only flow through cracks, joints and, in the case of some limestones, conduits of varying dimensions. (Note the differences in dimensions. (Note the differences between the photos of sand (Figure 2) (which provides, for instance, good filtration of microbial pathogens) and the joints, fractures and conduits in the limestones (Figure 3) (which have virtually no purification potential)).

While the EPA initiated a national groundwater monitoring network in the mid 1990s, the implementation of the EU Water Framework Directive in recent years has necessitated a review of the network, drilling of new wells (50 were installed in 2008 with funding provided by the Department of Environment, Heritage and Local Government), and increased sampling and analysis. There are now over 250 wells and springs in the network and this will increase to approximately 300 in the coming years. While this network has a lower density than most other EU countries, emphasis was placed on achieving an effective network that is representative of the pressures and hydrogeological settings present in Ireland.

**The Main Issues**

Not all groundwater quality problems are caused by human activities! Iron and managnese are often found in muddy limestone areas in counties such as Galway, Offaly (my brother’s farm well has high iron!), Westmeath and Meath. Sulphate and flouride can be a problem in some areas in Cavan and Monaghan. Hydrogen sulphide (giving the distinctive rotten egg smell) is present where certain geological conditions (usually deoxygenated, in the presence of sulphide minerals) are present. However, undoubtedly we, the people who live on the land surface, are the main cause of groundwater quality problems. The main pollutants present in groundwater due to human activities are: microbial pathogens (mainly faecal bacteria) and nitrates. Although the 2008 data haven’t yet been assessed, the results for 2007, which are given below, will reflect the current situation.

**Microbial Pathogens**

Microbial pathogens – faecal bacteria in particular, but also, potentially, *Cryptosporidium* – are the most widespread and significant, from a human health perspective, pollutant in groundwater. Positive faecal coliform counts were detected in 25% of water samples taken at the EPA groundwater monitoring stations. EPA monitoring has shown only a slight improvement in water quality in the last few years. Wells located in extremely vulnerable (i.e. thin subsoil) areas are particularly at risk from pathogens, especially if located close to on-site wastewater treatment systems (mostly septic tanks) or farmyards, or if landspreading of manure or slurry occurs nearby. In addition, wells (particularly private wells) are frequently not constructed such that surface water and shallow groundwater, which are likely to be polluted, cannot enter the well. (If you want good advice on this, see Guidance provided on the Institution of Geologists website – www.igi.ie.). Disinfection of all groundwater supplies in these areas, including domestic supplies, is recommended.

**Nitrates**

The average nitrate concentration for 2007 at the national EPA groundwater quality monitoring stations (174) was 16.8 mg/l NO3. The regional variation is shown in Figure 4. Generally the eastern and south-eastern portion of the country has the greatest proportion of monitoring stations with elevated nitrate concentrations. This is attributed largely to the impact of dairy, cattle and tillage farming. However, the situation in Ireland is far better than most other EU countries, as 75% of the monitoring points had average concentrations less than 25 mg/l NO3, with only 3 having average concentrations above 50 mg/l NO3 (the EU Maximum Admissible Concentration). The average nitrate concentrations for 2007 can be compared with the three-year averages for the period 1995 to 2006 in Table 1. This shows an increase in the proportion of wells with nitrates in the range 25-37.5 mg/l.
Wrasse (Labridae) in Irish and North-Eastern Atlantic Waters

By Declan T. Quigley

Wrasse belong to the second largest family of marine fishes (Labridae) comprising about 68 genera and at least 459 known species found worldwide in warmer tropical, warm temperate and temperate seas. Although at least 26 species of wrasse have been recorded from the NE Atlantic and Mediterranean (Table 1), only 8 of these have been reported from North- European waters and only 7 from Irish waters, two of which are currently regarded as rare. Ballion’s Wrasse (Crenilabrus bailloni) has only recently been recognised from localised areas of Connemara, Co Galway and there is only one doubtful record of Rainbow Wrasse (Coris julis) from the same region (apparently taken during the 1800s).

The Labridae represents one of the most diversified of all fish families in terms of shape, colour and size. Many species are highly colourful and several colour patterns may exist both within and between males and females of the same species. Although most species of wrasse are relatively small, measuring <15cm, the endangered Hamphead Wrasse (Cheilinus undulatus), found in the tropical Indo-Pacific, grows to a maximum length of 2.3m (SL), 191kg and lives for up to 32 years of age. The Minute Wrasse (Molucella strigata), which is confined to the Red Sea, is one of the smallest species (maximum TL c.6.0cm).

Many species of wrasse have the habit of burying themselves in sand or hiding in crevices or eels while “sleeping” at night and appear to be active only during daylight. In Northern European waters, wrasse are generally inactive at temperatures <10°C (i.e. during winter & spring). Ballan (Labrus bergylta) and Cuckoo Wrasse (Labroides dimidiatus) in order to gain immunity and an opportunistic meal from potential large predators.

Ballan Wrasse (Labrus bergylta)
The Ballan Wrasse is the largest (measuring up to 66cm) and most frequently encountered species in Irish waters; particularly abundant in rocky inshore areas and offshore reefs with dense algal cover, it occurs down to depths of about 1-5m (usually 2-30m). Adults are usually solitary or occur in small variably coloured groups. The species feeds predominantly on crustaceans (e.g. crabs, squat lobsters, prawns and barnacles) and molluscs (e.g. mussels).

The Ballan Wrasse is one of the few species of fish to build a nest; sex-inverted males construct a loose agglomeration of fine seaweed bound with mussel threads and wedged in a crevice. Spawning takes place between April and August. All Ballan Wrasse are born as females, mature as females when 2 years old (16-18cm) and subsequently undergo sex-inversion to become functional males when they are 4-14 years old (monandric protogynous hermaphrodites). A slow-growing species, the maximum reported age for males and females is 29 and 25 years respectively.

Cuckoo Wrasse (Labrus mixtus)
The Cuckoo Wrasse is relatively common in Northern European waters but little is known about its biology. It is one of the most colourful of all the Labrid species found in Irish waters (particularly the males). The species occurs either singly or in pairs in similar habitats to the Ballan Wrasse but usually at deeper depths (2-200m; usually 40-80m); it appears to migrate inshore during the summer and offshore during early winter. The male Cuckoo Wrasse also builds and guards its nest during the breeding season (May to July). While all Cuckoo Wrasse appear to be born as females, only some of these females subsequently undergo sex-inversion to become functional males when they are >4 years old (diandric protogynous hermaphrodites). The species is slow-growing - the maximum reported length for males and females is 40.0 and 30.0cm respectively – and long-lived (up to 20 years). The diet of the Cuckoo Wrasse is generally thought to be similar to that of the Ballan Wrasse, but in contrast, fish seems to be a significant element.

Specimen Ballan Wrasse & Cuckoo Wrasse in Irish Waters

Because of their larger size, Ballan Wrasse and Cuckoo Wrasse are the only two species generally encountered by anglers in Irish waters. Since 1960, a total of 370 and 366 specimens of both species have been recorded off the Causeway Coast, Co Antrim during September 1998; 97% of the specimens weighed <8.0kg. The majority of specimen Ballan (72%) and Cuckoo Wrasse (81%) were captured during July, August and September which may be indicative of a summertime inshore breeding migration.

Specimen Ballan Wrasse appear to be widely distributed, but the majority have been captured off the west, south-west and south-east coasts, with Counties Kerry (25.9%), Wexford (25.1%), Donegal (10.3%) and Clare (9.2%) accounting for 76% of the total. Specimen Cuckoo Wrasse are also widely distributed but appear to be particularly abundant off the north-east coast, with County Antrim alone accounting for 63% of the specimens. Specimens of both species appear to be relatively rare on the east coast (Irish Sea).

Although a significant number of specimen Ballan and Cuckoo Wrasse were captured on ragworm baits (29.7 & 27.6% respectively), crab baits accounted for the 35.4% of Ballan while mackerel baits accounted for 41.0% of specimen Cuckoo Wrasse.

The British Record (rod-caught) Fish Committee (BRFC) also operates a “mini list” for smaller marine species including records for Scale-rayed Wrasse Acantholabrus palloni (418g, Eddystone Reef, Plymouth, Devon, 1992), Rock Fish (360g, Portland, Dorset, 2005), Ballion’s (226g, Weymouth, Dorset, 2004), Rock Wrasse (109g, Newquay, Cornwall, 2001) and Goldsinny (102g, Portland, Dorset, 2005).

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Figure 1. Annual number of Specimen Ballan Wrasse (>2.154kg: N=370) & Cuckoo Wrasse (>0.567kg: N=366)
Codology – The Great Cod Fishery

By Daphne Pochin Mould

On the 23rd October, 1769, Mr William Flyn at the Sign of Shakespeare close to the Exchange, in the small but growing city of Cork, published the first issue of its first newspaper “The Hibernian Chronicle”. The first print run of 2000 sold out to subscribers. It was published twice a week, cost 1 penny (later one penny and a half pence), and couriers took it out to the country towns.

Today, when we can hear and see the world’s news as it happens, we may wonder and see the world’s news as it out to the country towns. (later one penny and a half subscribers. It was published of 2000 sold out to sub-

In Ireland there were the first horsedrawn mail coaches and a postal service. In Cork, you could get local news by hunting it out yourself. And until the “copy” was set in the small, close printed type of these old papers, everything was written by hand, with a feather and liquid ink. Printers wrestled with author’s handwriting. For everyone wrote with a feather, from the Book of Kells to laundry list, from the love letter to legal decree – a bird’s long wing pen feather (Latin, penna wing; in French, la plume) shaped to a nib with a “pen” knife. (Cork shipping brought in loads of quills.)

So Mr. Flyn was able to report the doings of the nations and their kings and queens, of Europe, their wars and Paris fashions, and he recorded every ship coming and going out of Cork: “name”, “where from”, “where to”, “master and cargo”. For Cork was alive with shipping (including the British navy), and they bringing in captured prizes to be auctioned off in Cove (now Cobh). Cork’s great butter market exported its salted butter world wide packed in barrels. The city was the great cattle killing mart of Munster, and the “copy” was set in the small, close printed type of these old papers, everything was written by hand, with a feather and liquid ink. Printers wrestled with author’s handwriting. For everyone wrote with a feather, from the Book of Kells to laundry list, from the love letter to legal decree – a bird’s long wing pen feather (Latin, penna wing; in French, la plume) shaped to a nib with a “pen” knife. (Cork shipping brought in loads of quills.)

But it seems that the first time with the Spanish, French and Britons (from Brittany) “had the advantage of us (the Eng- lish) in the seas off Newfoundland” judging by the number of ships working there in the year 1578: Spanish 100 besides 20 or 30 that came from Bisnice to take whale for train*, being 5 or 6000 tons; Portuguese, 50 in 3000 tons; French and Britons 150 or 7000 tons; English 30 or 50.

*Train oil: Any sort of fish oil, much used then for lighting lamps. From Old Dutch: traen - drop, tear drop) But the English soon “gained the greatest share, which ought to be esteemed our chiefest treasure, as it brings wealth to individuals, and strength to the state. All this immense fishery is carried on by the hook and line only, the bait is herring, a small fish called Capelin, and a shell fish called Clams”. Some 15000 British seamen were engaged in the fishing and many more people dealing with the catch at home. “Providence hath kindly ordained that this fish, so use- ful to mankind should be so very prolific as to supply more than the deficiencies of the multitude annually taken. Leewesinkel counted nine mil- lions three hundred and eighty four thousand eggs in a cod fish of a middle size, a number sure that will baffle all the efforts of man, or the voracity of the inhabitants of the ocean to extominate, and which will be, to all ages an inexhaustable supply of gratifying provision”.

The author of this long account of the cod, does not give his name – at that time many writers gave no “by line”. Big fish, “the largest that we ever heard of taken on our coasts, weighted sixty nine pounds, but the general weight on the Yorkshire seas is from fourteen to forty.” So the fleets set off, year in, year out, till Newfoundland’s sole livelihood was wiped out, and Iceland, and the “Chronicle” became “where to”, “master and cargo”. For Cork was alive with shipping (including the British navy), and they bringing in captured prizes to be auctioned off in Cove (now Cobh). Cork’s great butter market exported its salted butter world wide packed in barrels. The city was the great cattle killing mart of Munster, and the “copy” was set in the small, close printed type of these old papers, everything was written by hand, with a feather and liquid ink. Printers wrestled with author’s handwriting. For everyone wrote with a feather, from the Book of Kells to laundry list, from the love letter to legal decree – a bird’s long wing pen feather (Latin, penna wing; in French, la plume) shaped to a nib with a “pen” knife. (Cork shipping brought in loads of quills.)

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It has been observed that fish, they had to be processed on board as soon as possible. This was to prevent the fish from becoming rancid or spoiling. As a result, the fish had to be processed as quickly as possible, and the crews worked around the clock to ensure that the fish would be fresh and ready for market.

The fishing industry has always played a significant role in the economy of the region, and it continues to do so today. However, the industry has faced many challenges over the years, including changes in fishing practices, increased competition, and changing consumer preferences. Despite these challenges, the industry remains an important part of the local economy, providing employment for many people and contributing to the region’s overall prosperity.
Galápagos Islands

By Aoife O’Donoghue

THE Galápagos Archipelago straddles the equator lying 1000 km off the South American mainland to the west of Ecuador. The islands have never been attached to the mainland; being actually the tips of huge volcanoes, they arose directly from the sea. The ancestors of animals found on these islands must have arrived from the distant mainland and went on to evolve in complete isolation, resulting in unique species. This is so why many of the Galápagos species are endemic, meaning they are found nowhere else on earth.

But this is not the only reason why these islands are so special; because of a historical lack of large natural predators on the islands the native animals are not fearful of humans.

After years of anticipation I finally got to visit the Galápagos on my honeymoon in July 2008. Having studied zoology in college it was always my dream destination. One of my lecturers was a member of the Charles Darwin Foundation, a non profit organisation that supports ongoing conservation and research on the Galápagos Islands. He enthralled us with slideshows of the islands and their wildlife setting the seed for us to visit some day.

As the plane descended, the dark, arid landscape struck me; although I knew what to expect I was still surprised by the apparently stark scene. We were met by our guide at the small airport on Baltra Island who took us to our boat which would be our home for the week along with the 10 other passengers. Our boat, *The Beagle*, was a beautiful 100 ft schooner owned by a Galápagos family, and was named after the boat Charles Darwin visited the islands on 173 years earlier. On the first morning when I arrived on deck huge frigatebirds were flying low overhead. These beautiful birds are the pirates of the skies in the archipelago robbing food from other birds at every opportunity. The males have big red inflatable pouches which they fill with air at breeding time to attract females.

After breakfast we went ashore on South Plaza Island where we were greeted by sea lions hogging the landing area. Our guide had to shoo them away in order for us to make our way on shore! Stepping off onto the black rock gave us our first close encounters with the beautiful sally light-foot crabs. These brightly coloured crabs are red, orange and yellow on top with a light blue underbelly. As we walked on we saw yet more sea lions camouflaged against the dark rock along with the infamous marine iguanas baking in the morning sun. The marine iguanas on Galápagos are the only truly marine lizards in the world and are endemic to the islands. They start their days huddled together heating up in the morning sun before grazing on the seaweed in the surf.

Further inland we came across land iguanas; the males with bright yellow upperparts are more brightly coloured than the females, as is usually the case in the animal world. Every now and then we spotted a male lava lizard displaying on a rock or trail post by doing a series of push-ups. We also saw some of Darwin’s infamous finches – cactus and small ground finches. My eyes honed in on their beaks as I tried to spot the differences which inspired Darwin’s theory of evolution through natural selection.

On our approach into the bay around Sante Fé Island we were treated to a rare sight – Orcas; killer whales within metres of our boat! The waters around the islands are teeming with life and the snorkelling is breathtaking. The visibility is generally very good in the turquoise waters and the variety and colours of the fishes, sea stars and coral is incredible. But the experience of the entire trip for me had to have been snorkelling with sea lions. They seemed to enjoy playing with us; the more I tossed and turned in the water, the more...
they joined in. I have never had such an interaction with a wild animal; it was truly exhilarating!

We also saw endemic rice rats on Sante Fé; these cute little creatures have fat bodies and large ears making them like Disney characters. They are very shy and thus rarely seen so our guide was extremely excited by the find. Española Island is a bird paradise and we were lucky enough to witness the courtship behaviour of a pair of blue-footed boobies. We watched them hop, call, clash their beaks, flap their wings, and copy each others movements; all within 2 ft of us. They just carried on oblivious to the onlookers. Santiago Island provided another array of sightings – crested night herons hiding in the crevices, the rarer Galapagos fur sea-lions lounging in the sun, ghost crabs running along the shore and sea-lion pups playing in nursery pools. An even greater treat lay below water however. Snorkelling off the beach we encountered green sea turtles feeding hungrily on the seaweed in the shallows; one actually brushed by me!

On our final morning while we explored Turtle Bay on Santa Cruz Island in a dingy we witnessed the magnificent sight of boobies diving in synchrony. The flock wheel in the air until they are directly above their prey and then plummet downwards before folding in their wings as they hit the water at the speed of an arrow.

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The Galápagos Islands did not disappoint; it was in fact an even more amazing experience than I had built it up to be. What strikes you is not just how abundant the wildlife is but how close you can get to these unique animals. As clichéd as it sounds, visiting these islands really does feel like being in your own wildlife documentary, complete with David Attenborough style commentary from your guide.

Aoife O’Donoghue is Outreach Officer with Tyndall National Institute, UCC, Cork, Ireland.
Fishermen and Scientists Research Society

A Proven Model For Effective Collaboration Between Fishermen and Scientists

By Patty King

Established in January 1994, the Fishermen and Scientists Research Society (FSRS), a non-profit organization based in Halifax, Nova Scotia, Canada, has become recognized internationally as a model for effective collaboration between fishermen and scientists. An active partnership between fishermen and scientists, the FSRS has improved the working relationship and level of trust between fishermen and scientists, and has enabled a wide spectrum of fisheries research to be done. This collaborative approach to fisheries science has led to an increased understanding of the scientific rationale for data collection protocols by fishermen. It has also increased fishermen’s understanding of stock assessment procedures and models. In addition, scientists have gained a better understanding of fishermen’s knowledge and how it can be incorporated into fisheries science. Fishermen have become more informed and equitable in resource conservation and management process in a more informed and equitable manner.

The FSRS was developed with the overall objectives to promote effective communication between fishermen, scientists and the general public, and to establish and maintain a network of fishermen and scientists capable of conducting collaborative research and collecting information relevant and necessary to the long-term sustainability of marine fisheries. The current membership consists of 410 members, including 239 fishermen members and 151 scientists/other members. Scientist members have come from both the government (e.g. Department of Fisheries and Oceans) and academic communities, as well as from the private sector.

The early days involved many discussions in kitchens, town halls, church basements, and bait sheds to build initial bridges and trust between fishermen and scientists, to develop some common language, and to negotiate common goals. These early steps were necessary to overcome the significant mistrust that had developed between the two groups. Many fishermen felt that scientists had nothing to offer because they were not fishermen and many scientists felt that fishermen, without formal training, could not participate in scientific discussions about fish stocks. From these humble beginnings, with not much more than a willingness to talk, and a feeling that co-operation was better than confrontation, Department of Fisheries and Oceans scientists and fishermen, among others, worked towards the evolution of the FSRS. It has now developed into an effective organization which brings the knowledge of fishermen into the scientific arena by agreeing on rules of information and educates fishermen scientists by making them realize the wealth of knowledge about fishes and fishing that fishermen gain by experience. In turn, fishermen gain an increased understanding of the scientific methodologies and processes involved in managing the fisheries resource.

The FSRS was formed out of the recognition by both fishermen and scientists that each had valuable contributions to make to the effective long-term stewardship of living marine resources. A partnership based on effective communication and common goals was a necessary prerequisite to realizing the FSRS’s objectives. This partnership has enabled valuable joint projects that are important to the advancement of assessment and management of our fisheries resources.

The original intention when the FSRS began was to implement a project to collect catch and effort, oceanographic and spawning information for groundfish species. The enthusiasm of members quickly took the FSRS well beyond the original data collection goal. By the end of the first year, members were collecting information not only on groundfish, but also for pelagic fish species, lobster and shrimp. Since then, the FSRS has taken on a number of research projects, including:

- Identification and charting sensitive groundfish habitats on the Scotian Shelf;
- Inshore Tagging Project to tag cod, haddock, and halibut in the inshore waters from Country Harbour to Lunenburg, Nova Scotia;
- 4VsW Sentinel (Groundfish) Monitoring Project;
- Condition/Reproduction Study;
- Enhanced Fish Diet Collection Project (Predator/Prey Relationship Study);
- Lobster Recruitment Index Project;
- LFA 33 Commercial Trap Sampling Project;
- Lobster Blood Protein and Moulting Research;
- Artificial Collectors as a Tool to Measure Settlement of Young-of-Year Lobster in Coastal Nova Scotia;
- Lobster Carapace Length Frequency Study;
- Lobster Weight vs. Carapace Length Study;
- LFA 34 Berried Lobster Study;
- Lobster, Snow Crab, Jonah Crab, Rock Crab and Toad Crab At-Sea Sampling;
- Dogfish Sampling Program; and
- Inshore Ecosystem Research On The Scotian Shelf.

As part of their participation in the above projects, fishermen have received training in fisheries science and the collection of scientific data, enabling them to participate in all facets of fisheries research, from identification of research questions, to development of project procedures and protocols, collection of data and peer review of the results. The fishermen have in many ways themselves become scientists on the water.

One of the FSRS’s primary objectives is to facilitate and promote effective communication between fishermen, scientists, and the general public. With a view to advancing communication between these stakeholders and increasing fishermen’s participation in fisheries science, the FSRS has undertaken a number of initiatives since its inception. These include an annual conference, bi-annual lobster science workshop, a quarterly newsletter, Hook, Line and Thinker, and a website, www.fsrs.nsc.ca.

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By Allan Mee

WHITE-TAILED Sea Eagles, our largest resident bird of prey, were once apparently widespread in coastal areas in the west of Ireland before being driven to extinction following centuries of human persecution. Look at any of the Ordnance Survey maps of coastal Kerry and Cork and you will find many references to eagles. The prevalence of place-names containing the Irish word for eagle, 'Iolar', or anglicised derivations suggests a long historical association between man and eagles. Examples include place names such as Beannamill Head (mountain of the eagle) on Valentia, Cloghanannillar (stony place of the eagle) near Waterville, and Coorannullar (round/pointed hill of the eagle) near Ballydehob in west Cork. While some sites were undoubtedly the breeding haunts of our other native eagle, the Golden Eagle, most of the coastal sites were once occupied by Sea Eagles. According to Ussher and Warren, by 1894 there were "still one or two pairs in Mayo and Kerry" but by 1900 the species was gone, the last documented nesting being in 1898. Golden Eagles hung on as a breeder for another 14 years, the last documented being in Mayo in 1912. For the first time in millennia Irish skies were devoid of eagles.

In 2007-08, the Golden Eagle Trust in collaboration with the National Parks & Wildlife Service, began efforts to return the Sea Eagle to Ireland. Thirty-five chicks were collected under licence from nests in west-central Norway by ornithologists from the Norwegian Institute of Nature Research and Norwegian Ornithological Society and transported to Kerry. The eaglets spend a further two months in captivity during which time they hopefully become imprinted on their new surroundings. During this time there is minimal human contact with the birds and every effort is made to mimic nesting in the wild. After release birds are provided with supplementary food at sites in the national park to help maintain survivorship. Because the released birds lack the care and attention of their parents for the first few weeks in the wild it is important that we give them a helping hand at this critical stage!

During this time there is minimal human contact with the birds and every effort is made to mimic nesting in the wild. After release birds are provided with supplementary food at sites in the national park to help maintain survivorship. Because the released birds lack the care and attention of their parents for the first few weeks in the wild it is important that we give them a helping hand at this critical stage!

Since release birds have spent most or all of their first winter in the wild within 20 km of the release area where they are heavily dependent on carrion, mainly dead sheep in upland areas, for survival. Although one exceptional male left the release area in late September 2007 to visit the Blaskets and the Skelligs (Ireland’s major gannet colony) the next day, most dispersal did not take place until March-April 2008 when five birds went to east Cork. Others departed in April-June when birds were found on Lough Corrib, Co. Galway, the Ox Mountains in Sligo, and in Mayo and Waterford. At least two birds spent several months in west Cork in upland areas north of Dannonaw. Two birds spent the summer in Northern Ireland before returning to Kerry in September-October 2008. Most recently a female released in 2007 has been spotted in Glen Garry in the western Highlands of Scotland, 650 km north of Killarney and exactly half-way ‘home’ to Norway. It is hoped that in time she will return to Kerry, perhaps with a Scottish mate in tow!

Although we believe that the project is on course to restore this magnificent eagle, a shadow has been cast over the fate of the species. Between November 2007 and May 2008 four Sea Eagles were recovered dead in Kerry. Post-mortem and toxicology tests found that all four had died from ingesting poisons presumably laid on sheep carcasses to kill foxes and crows. However, the death of three birds within one kilometre of each other over a short period suggest that birds may have been deliberately targeted.

The use of poison meat baits remains the greatest threat to the project. In January 2008 Minister John Gormley banned the use of poisons on meat baits for the control of crows. However, the use of poison meat baits for control of foxes was not covered by this legislation. Thus, the threat to eagles and other scavengers such as the Buzzard and Red Kite continues. We hope the government will act soon to end the anachronistic use of poison meat baits. White-tailed Sea Eagles reach maturity at 5-6 years old so we are hopeful that we will see the first breeding in Ireland by 2012. However, it is critical that enough birds survive to breeding age for a viable population to establish. With the support of the public and the communities where eagles settle to breed, we hope that An Iolar Mhara will once again take its rightful place on the wild coasts and lakes of Kerry and Cork.
By Alex Kirby

A SEMINAL conference was held in Copenhagen in early March 2009. Organised by scientists, it was called to review the most recent climate science, in order to update the understanding of the problem which politicians had gleaned from the latest report from the Intergovernmental Panel on Climate Change. That was published in 2007, and was stark enough, talking of the possibility of “abrupt or irreversible” changes ahead. But the report was based on research published only up to the end of 2004 - and climatologists now know much more than they did then. In particular, the most up-to-date findings suggest that sea levels could rise by a metre or more by 2100; that the Arctic summer sea ice could disappear within as little as five years; and that the Greenland and West Antarctic ice sheets may be more vulnerable to melting than had been thought (this occurred nine bn by 2650). He is a sober and responsible man, who has known for years that the world faces a grave crisis. Yet the latest findings unnerved even him.

I suppose if you were an optimist you would think that what is happening to the climate is all we have to bother about. In fact it is only one of a number of problems which will mean inescapable change. The only choice for us is whether or not we try to manage and adapt to those changes. As far back as 2003 the British Astronomer Royal, Sir Martin Rees, published a book called Our Final Century, in which he wrote: “I think the odds are no better than 50/50 that our present civilisation will survive to the end of the present century.”

Among the most pressing problems are species loss, water shortage and population growth (from under seven bn today to a projected nine bn by 2650). We are destroying other creatures before we have even realised that they exist, ignorant of their part in the web of life and the degree to which we may depend on their survival. The evolutionary biologist Edward Wilson of Harvard, often called Darwin’s true heir, has a telling image for the damage we’re doing: “Destroying a rainforest for economic gain is like burning a Renaissance painting to cook a meal.”

There is a finite amount of useable water in the world (though yes, you can desalinate it, if you have huge amounts of energy). No water means no food. China is so worried about the rate at which its Himalayan glaciers are melting means no food. China is so worried about the rate at which its Himalayan glaciers are melting that it is to build 59 reservoirs in the far western province of Xinjiang. It will also spend an extra £13 bn in 2009 (a 20% increase) on agricultural production because of fears of a possible food crisis.

The facts presented in Copenhagen are enough to induce despair, even without the facts of global trashing compounding them. But if that is what they do, they’d be better left unsaid. Despair is the surest route to the other interlocking parts of the environmental crisis can also be faced down.

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Realising a dream of an East Coast Nature Reserve

By Wendy Jones

BIRDWATCH Ireland has restored a wetland nature reserve, close to Dublin, as part of a four-year LIFE-Nature project to protect threatened water birds and rare fen habitats and to provide access to visitors. The 90 hectare East Coast Nature Reserve, located within the Murrogh Wetlands, demonstrates at national level the potential for reversing damage to wetlands in Ireland.

Oran O’Sullivan, the project manager and Chief Executive Officer of BirdWatch Ireland, is a man with a mission: his long-held dream of realising a nature reserve along the country’s east coast, close to an urban population, is nearing completion thanks to co-funding from the EU LIFE-Nature programme.

The 90-hectare reserve was purchased at the start of the project, to help promote conservation needs across the whole Murrogh - a 15 km long, but narrow coastal wetland complex, bounded on its seaward side by a shingle ridge. The reserve, at Blackditch Wood, Newcastle, County Wicklow, harbours three main habitats: Calcareous fen, an EU priority habitat; wet grassland and birch and alder woodland. The fen is the most important habitat for flora, while the grasslands and pools provide crucial nesting and feeding areas for highly endangered species: Greenland white-fronted goose, greylag goose, whooper swan and other bird species as the kingfisher and little egret.

Ireland has a long history of damage to wetlands caused by drainage and agricultural reclamation. The reserve’s wet grasslands had been used for intensive sheep and cattle grazing. Deep drains cut across the land and biodiversity was low overall. The fen was in a degraded state: Drains and planted conifers were drying it out and willow invaded from neighbouring woodland.

O’Sullivan praises the board of BirdWatch Ireland’s ‘far-sighted’ decision in 2003, to fund its share of the €2.1 million project by selling off its prime head-office premises in central Dublin and re-locating to more modest offices, close to the project site. “By cashing-in our Dublin property, we were able to purchase the land and immediately begin the restoration works,” he says.

What did LIFE do?

Led by the project officer, Jerry Wray, the main actions have focused on these three main issues:

- Water management
- Restoration grazing
- Tree and scrub removal

Water management

Improved habitat would be delivered through actions to reverse the drying out of the wetlands, by raising water levels and by the control of water flow through the installation of sluice gates. The sluices enable the control of water flow between and within the different habitats on the reserve. Water levels are maintained in the fen throughout the year, but are dropped in the grasslands during the summer months to allow cattle grazing.

The existing drainage ditches at Blackditch with steep sides have been re-profiled and cut so that one side is more gently-sloping. This has increased ecological value by promoting emergent insect life and allowed an easier access to water birds.

Open water areas (‘scrapes’) have been created, which successfully attract water birds, including the target species: little egret (where, following the actions, up to fourteen birds have been recorded) Greenland white-fronted goose (up to six birds) and whooper swan (up to 16 birds). Monitoring of bird numbers from within and around the scrapes has also recorded numerous mallard, over 290 greylag goose, 91 snipe some 300 teal and 300 wigeon. Wintering waders include Lapwing, (500 plus), Curlew (181) and smaller numbers of black tailed godwits and redshank.

Restoration grazing

Prior to purchase, intensive cattle (and sheep) grazing on the wet grassland areas had damaged the habitat and was threatening the value of the site for wetland plants and water birds. However, the introduction of ‘low intensity’ restoration grazing by cattle is proving adequate for habitat restoration and is also providing suitable feeding conditions for both wintering and breeding birds through the creation of ‘tussocks’ (tufts, or thick clumps of coarse grass or sedge).

Says O’Sullivan, this low-level grazing has proven beneficial both to the project and to the grazers (two neighbouring land-owners). Crucially, no money changes hands. We need to have the wetlands grazed in the summer. In return, they maintain fences to provide machine cover, for example, tractors should we need them. It’s a kind of barter system and it works.

In the fen, low-intensity grazing by Kerry Bog ponies helps control encroaching coarse, herbaceous species and encourages special fen plants and grasses, such as saw-sedge (Cladium mariscus). With their hardy pedigree, these diminutive ponies are remarkably well-suited to the wet conditions of the fen and are proving their worth in its restoration.

Tree and scrub removal

The removal of a plantation, (which together with the encroachment of scrub had overall size of the fen) has proved the most time-consuming element of the restoration work. Two elements were essential, the removal of a plantation of the American lodgepole pine and the control of a large percentage of the invasive willow and goose.

Winches were used to minimise the use of heavy machinery in the fen with all the material chipped adjacent to the fen. “We thought we were going to be able to sell on this timber, but because of the difficulty of getting onto the water-logged land, and the stunted nature of the pine, nobody wanted it,” says O’Sullivan. The control of the invasive willow on the main body of the fen was only possible using chainsaws. The tussocky nature of the ground made vehicular access impossible, and felled material had to be burnt in situ or extracted and chipped, the chippings used for access trails.

The removal of trees on the margins of grassland areas of the site has created an open area over part of the reserve. This has encouraged green, which prefers exposed situations. This has resulted in regular goose usage, including occasional usage by Greenland white-fronted goose, for the first time in over a decade.

What was the outcome?

BirdWatch Ireland has worked hard at informing people of its work at Blackditch – organising, especially at the beginning, a number of public meetings to explain the project’s aims, as well as open days for the public. According to O’Sullivan, at the early meetings there were some concerns, particularly amongst farmers, that they were going to flood the land. Now, he says, there is a clearer understanding and support for what they are doing: “This awareness-raising was needed and has been good for the project and for the environment… Traditionally in Ireland, there has been a rather negative attitude among the land-owners towards Natura site designation. This is changing.”

Blackditch is an historic site for wintering whooper swan, the greylag and Greenland white-fronted goose. Prior to purchase of the site these species had only been infrequently recorded. Since BirdWatch Ireland took over the management of the site, they have all been recorded, including increasing numbers of little egret and many other bird species.

Access to the reserve is currently limited to supervised open days and school visits. But by summer 2009, the public will have access to several paths and circular walks to at least one hide.

Life after-LIFE

Looking to the future, as the work on this project draws to a close, O’Sullivan says he would like to work with more local land-owners using this site as a demonstration of good management practices. BirdWatch Ireland is also seeking additional funding to support the on-going maintenance of the reserve after-LIFE. In addition, encouraged by very positive responses to market research, there are plans for a follow-on project to provide an education and visitor centre for the reserve.

Wendy Jones in a journalist with AEIDL, Brussels; this article is based on a piece written for a LIFE Focus Publication.
The Kerry Bog Pony is a rare breed of horse similar to the Shetland pony in stature. Also referred to as 'Heritage Ponies,' these diminutive horses were originally bred in the 17th Century as workhorses. Their strength and resilience made them ideal for hauling turf and seaweed from peat lands, seaweed from the shore and even as a mode of travel.

Unfortunately, by the late 20th Century the pony population in Ireland was on the brink of extinction, dwindling to only 20 individuals in 1994. Today, under the auspices of the Kerry Bog Pony Co-Operative Society and local breeders, there are approximately 130 individuals in the country. The ponies were donated to the project by the NGO, Genetic Heritage Ireland.

East Coast Nature Reserve

(See article “Realising a Dream on East Coast Nature Reserve” on page 15)
Ignorance in “Paradise”

A letter from Norway

By Barrie Dale

NORWAY is considered to be one of the best countries on Earth in which to live, according to the international ranking of nations. As an expatriate Englishman living in Norway for the past thirty years, I fully agree. I travel a fair bit to other countries as part of my work, and I have never been disappointed on returning to what is now my home. For me this country represents a delightful combination of spectacular natural environment and a humane society founded on good principles of trying to do what is best for people here and elsewhere in the world. Not least, the ratio of trees to people is about right – recently in Hong Kong I found myself wondering how many people they have per tree, whereas here even without exact data you know there are many thousands of trees for every one of the 4.7 million inhabitants.

The inspiration I find in the natural world is an important motivation for my teaching and research in environmental sciences, and I firmly believe that we humans are most fulfilled when we are in tune with nature. From this, it follows that whenever and if I try to assess how well the people are looking after their natural heritage, where and in what ways are humans changing the face of the planet, and how much of this is from what can only be called ignorance? History is full of appalling ignorance, and I am not at all convinced that we have escaped it yet, but at least we should be trying to oppose it. That is not to blame the masses of peasants in earlier societies who often had more than enough to do just feeding themselves and their families, while under the constant threat of oppression from a few powerful people ruling their lives – but it allows us to question just how far we have really progressed?

These introductory remarks are not meant to imply that I equate Norway with paradise. That would be going too far, but as of now it has generally retained a magnificent natural environment, and it is known internationally for its well-educated and compassionate people. Everything is relative, and compared with many countries it may be tempting to regard Norway as a sort of ‘paradise’. As such, it is worth probing a bit deeper to find out how well the environment is fairing in this land of “paradise”. As such, it is safe to say that never before has there been so much stated concern about the environment, but, as with charity, this should begin at home. My worry is that it seems easier for politicians and increasingly the public, too, to talk about the big global issues such as climate change, than it is to watch over their own local environment. At home, the same politicians make speeches about international competition and the need for more houses, roads and jobs, but say little about what sort of local “natural environment” the next generation will inherit even though there is clearly a connection.

My interest in a National project to build a motorway through the area where I live prompted me to look closer into “the state of the environment” here, and I will use this in an example even though it is not necessarily typical for Norway. My aim is not to dump on the Norwegians, whom I respect, but to draw attention to how I think Norway and many other countries (including Ireland) probably are irreversibly destroying the local natural environment, relentlessly, bit by bit, in the name of progress. I am afraid that all the talk about what climate change may do to the environment is diverting our attention from what we ourselves are doing every day? To argue against progress as such is futile – it is here to stay and we all benefit from it to some extent – but there is plenty of evidence that this rate of growth is unsustainable – it is not only the environmental damage, but also the cost of building, and the resources it uses up.

One environmental project which has grabbed worldwide attention is the State Roads Dept. project to build a motorway directly affected our home, we live a few kilometre away, but I listened to the plans at public hearings with growing disbelief at the mis-use of science they revealed. The State Roads Dept. presented assessments of three possible corridors in their environmental impact report, meant by law to provide an objective basis for choosing the best route. To my surprise, they recommended the northern corridor – which is 4 km longer (in a country saying it is trying to cut down energy use and pollution) and the one eating up much more of Norway’s best growing soil (in a country with less than 1% arable land and a world need for feed twice as many people within the next decade or two). In addition, transport North would impinge close to the greatest concentration of homes, schools, etc. Against progress as such this rate “Paradise” could be lost!

Two things were apparent at this stage: 1) The Roads Dept. wanted to build in the northern corridor, come what may, and 2) their report just happened to support this wish by concluding that North was environmentally best! (it now seems they were influenced by expectations of larger road-toll revenues). In my opinion, their arguments were unscientific and blatantly biased towards North, even steoping to the use of incorrect traffic data. Norwegian law rightly encourages maximum influence by local government in decisions affecting land use, because those who know best tend to be those who live there. In this case, public pressure was forced back, and the road is going to go in a southerly alternative. However, the law also allowed the Roads Dept. to appeal against the local government’s choice to the Environmental Protection Dept., which is likely to appeal against South.
I was (again naively) sure that once the road department’s appeal shifted the decision process to The Environmental Protection Agency, they at least would live up to their name and see through the scientific weaknesses that were clearly pointed out to them. This Department is generally held in high esteem by Norwegians – after all, the minister regularly makes impressionistic speeches at important international conferences lauding the merits of combating global change, and rightly hauls his British counterpart over the coals regarding Sellafield. However, what these people do not realise is that the Department has two functionally separate sections: a scientifically staffed section of researchers contributing to environmental knowledge, and another staffed by politicians and accompanying bureaucrats – and it is the politicians who decide cases like this!

“I this is more than local interest – if the Norwegians, a wealthy and well-educated society without large population pressures, cannot take good care of their environment, what are the long-term chances for the planet?”

I never feel comfortable writing about politics, though I should try to adapt since I am on record as observing that science itself is becoming more political. However, in this case it was unavoidable – politics in the end determined where the motorway should go. Ideally, having got this far, the professor would like to be able to reassure the students that it is more than enough room for speculation, and there is more than enough room for speculation in this case. Fuelled by uncertainty, many people believe that some politicians, with farms on the south side, influenced the then-Conservative Environmental Minister to support a road on the north side, well away from their properties. However, the motives behind the decisions of these few powerful people have little bearing on the main issues here – the sad truth is, in my opinion, that their decisions were made on the basis of environmental ignorance. Ironically, the opposition to this environmental lunacy came from a very mixed group of “ordinary” members of the public, by no means all with higher education, but united in a basic realisation that their local environment was being unnecessarily threatened by a powerful few who neither heeded them as local residents nor had any respect for people. So what am I supposed to tell the students? Scientists can improve our understanding of the natural world and warn when all is not well, but if society is not listening, what is the point? The main lesson to gain from this case is that at least some “ordinary” members of the public are listening – if nothing else, common sense is beginning to question the validity of politics based on communities competing with each other for “progress” (if we don’t get the motorway others will and we will fall behind!). They are realising that from an environmental perspective this so often translates into local communities competing “to ruin their own local environments” and increasingly with globalisation to countries competing to do the same at national level. Sadly, our motorway example suggests that this headlong dash for “progress” may be driven by basic forces of wealth and political prestige – isn’t that what the earlier peasants were toiling against?

I am seriously thinking of including Medieval History into my Environmental Studies curriculum – it’s not more science the students here in “paradise” need – it’s a better understanding of ignorance!

Professor Barry Dale,
Department of Geology,
University of Oslo, Oslo, Norway.
Birds of East Anglia’s Waterland

By Anthony Toole

WE huddled in the hide, clapping hands and stamping feet, glad to be out of the November wind. By the dawn light, it was just possible to distinguish between sky and sea. The sky brightened and the distant edge of the sea sharpened, but the horizon again quietened, the horizon again strengthened daylight.

As the laggards of this wave passed by, and the sky quietened, the horizon again rippled, indicating the start of a repeat performance. And while this was happening, the strengthening daylight revealed a similar number of wading birds foraging in the mudflats a few hundred metres from the shoreline.

We left the hide after the better part of an hour, and walked along the sea wall, past several brackish lagoons. A representative of the Royal Society for the Protection of Birds (RSPB) told us that he had so far estimated the number of geese at 30 000. And they were still coming.

The RSPB bird sanctuary at Snettisham, on the eastern shore of The Wash, is just one of many such sites along the East Anglian coast. The Wash is a huge intertidal basin at the confluence of the major river systems of the Welland, Nene and Great Ouse, which themselves drain the waterlogged fens and create a series of freshwater nature reserves. These are intended to encourage snipe and lapwing, populations of which are rich in bird life throughout the year.

Agricultural land on The Wash, sheltered by the sea wall.

Clay Marshes, backed by the sea wall - North Norfolk coast.

One of the seven lakes at the Natural Centre for Norfolk, Pensthorpe.
seen more than a 50% decline during the last two decades. They should also help increase the numbers of avocets and bitterns, which are found almost nowhere else in Britain.

Farther inland, but equally important as wetland sites for bird life, are the Norfolk Broads. These are large expanses of shallow water, formed during the fourteenth century, when the sea level rose and flooded pits that had been created in earlier centuries by the digging of peat for fuel.

In summer, the Broads are home to nesting terns, coots, moorhens, cormorants and great crested grebes. Extensive reed beds provide shelter for rare birds such as bitterns, water rails and bearded tits. Winter sees them colonised by visiting wigeon, pochard, teal, tufted duck and shoveller. Otters and water voles also live among the reeds.

The edges of the Broads are extremely boggy. Much of the vegetation consists of willow and alder, and the environment is the nearest in Britain to that of a tropical swamp. The characteristic smell that hangs over these margins is of methane, formed by the decomposition of dead vegetation. This carr woodland is a dense jungle of around 250 species of plant, among the most prominent of which are nettles, red campion, herb Robert, honeysuckle and yellow flag iris. Long-eared bats and pipistrelle roost in the alders and feed on the abundant insect life of the swamps. There are numerous dragonflies and damselflies as well as Britain’s largest butterfly, the swallowtail, which lays its eggs exclusively on milk parsley, a rare fen plant, found only in East Anglia.

Near Fakenham, to the northwest of Norwich, is the Pensthorpe Natural Centre of Norfolk, where much important conservation work is being carried out. This is a mosaic of habitats, which include flower gardens, woodlands, hay meadows, reed beds and seven lakes.

In one of the lakes is Squirrel Island, on which a thriving population of red squirrels is kept safe from intruding greys. The island will only support a small group, so when breeding has produced a surplus, these have been sent to supplement a population on Anglesey.

The expanses of open water have brought in many wild birds. More than seventy species breed at Pensthorpe. Birds of passage include ospreys, while winter brings hundreds of migrants, including Arctic visitors, such as barnacle geese, some of which have remained here to breed in the spring.

The Pensthorpe Conservation Trust was set up in 2003, with the aim of breeding threatened wetland species. The Eurasian crane was once widespread in Britain, but hunting and drainage of its habitat led to its disappearance during the sixteenth century. The loss of European wetlands led to a similar decline on the continent. Small numbers, however, have recently begun to breed at sites on the Broads. In 2004, the Pensthorpe Trust, in conjunction with the RSPB, began a feasibility study, with a view to breeding cranes prior to their re-introduction to the wild.

Another, once common bird of the British countryside is the corncrake. This bird has been in decline since the nineteenth century, as a result of changing agricultural practice, and is now largely confined to the western fringes of the British Isles. With help from Natural England (formerly English Nature) and the London Zoological Society a number of corncrakes have been bred and hand-reared at Pensthorpe then released onto the RSPB reserve at Nene Washes in the Cambridgeshire fens. These released birds have been closely monitored, and during the first years of the project appear to have bred successfully in the wild. It is anticipated that their distinctive call may once again become a feature of Britain’s meadows.

M.A. Toole, 65, Cheswick Drive, Gosforth, Newcastle upon Tyne, NE3 5DW, U.K.

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A GREENER CLEANER
By Arden Miller

FROM the days of indoor plumbing through the Industrial Revolution, cleaning products consisted of simple solutions found around most homes. Baking soda, distilled white vinegar, lemon juice, olive oil, and salt used alone, or in some combination, kept interiors clean and made furniture and hard wood floors gleam. It wasn’t until after World War II that chemicals—initially developed for warfare purposes—found their way onto grocers’ shelves and into people’s homes... 

As a popular advertising slogan proclaimed, “Better living through chemistry.” People bought it, and bought the products that promised to make whites whiter than white, floors cleaner than clean, and everything else sparkling and sanitized within an inch of its life.

And if today’s cleaning aisles are any indication, we’re still buying it. There are literally thousands of synthetic chemical compounds within cleaning products packaged and marketed to grab your attention. Most of us have been exposed at one time or another to these compounds, and it is believed that there is a correlation between chemical exposure and medical issues. Many compounds can cause people to develop respiratory problems, and since 1980, there has been a 160 percent increase in asthma among children under the age of 4. Breast cancer rates in the United States are 30 percent higher than in less industrialised countries. Ionic, especially considering that U.S. health care is considered by many to be the best overall health care in the world. And, while it would be virtually impossible to pin this all on better living through chemistry, it does make one wonder if these products that are cleaning our homes are hurting our bodies.

And here are a few more things to ponder... Did you know that dish washing liquid is the #1 cause of children being poisoned? Most are petroleum-based and these coloured and scented products are found around the house. Most contain an irritating blend of chlorine and hydrochloric acid; just thinking neutralises them. Acidity is measured by pH, on a scale of 1 to 14. 7 is the Swiss-land of pH; anything above 7 is alkaline, anything below, acidic. When you are cleaning something, you can confuse mothballs with your cleaning product, which may be deadly. How acidic is your toilet cleaner? Chances are, it is not neutral. Acidity neutralises smell immediately. Discard your toilet cleaner. 

The pH of your products is critical. If you don’t require your whites whiter than white—are you really going to use the hydrogen peroxide in a spray bottle? Boil one cup of water, add 1 cup baking soda and 1 cup vinegar to boiling water (mixture will fizzle), pour down clogged drain. Flush with water. Repeat if necessary until water runs freely. 

Acidic vinegar will neutralise stains and pH balances, think neutral. Acidity is measured by pH, on a scale of 1 to 14. 7 is the Switzerland of pH; anything above 7 is alkaline, anything below, acidic. When you are cleaning something, you are, in effect, neutralising its pH. Club soda, an alkali, will remove coffee and wine stains, which are acidic. Acidic vinegar will neutralise water scale, an alkaline stain.

Arden Miller, Editor, “Costlines 2008: The Blue Green Connection”, Printed with permission from Coastal Zone Management, 251 Causeway Street, Suite 800, Boston, MA 02114, USA. http://www.mass.gov/czm/coastlines/index.htm

Ye Olde Thyme Disinfectant
According to Days of Yore, grave robbers who suffered plague victim’s remains rubbed this on themselves to protect themselves from germs. Hopefully, your household tasks aren’t quite as gruesome.
• 2 quarts organic apple cider vinegar
• 1 tablespoon each of: dried lavender, rosemary, sage, & mint
Mix together in a 2-quart jar with a screw top lid, close tightly. Let sit for 4 weeks, then strain out herbs. Pour into spray bottle. Use as spray disinfectant on countertops, door knobs, telephone receiver, etc.

*1 quart = 946 ml

Safe Scents
Vanilla, cinnamon, cloves, and mint (fresh, or dried) all safely emit scents. In a small saucepan, boil 2 cups of water with any combination of spices that you like. When the mixture has reached a boil, turn it off. Leave the pan out to scent your home as long as the scent lasts. Vanilla extract can also remove unwanted smells; simply place a tablespoon of vanilla in an open container next to any area that needs a smell neutralized.

Safe Sweet Mist
Using an eyedropper, combine the following essential oils (found in most health food stores, or on-line) in a small glass jar: 20 drops sweet orange, 10 drops lavender, 10 drops eucalyptus. Mix together well and combine 4-8 drops of this mixture with one cup of purified water in a spray bottle. Use spray anywhere you like, anytime. Store in a cool place, away from sunlight and it should last for 1-2 months.

Formulas

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dull wood floors, scratched table tops and furniture</td>
<td>1 cup olive oil + juice of one lemon (use soft cloth, rub and polish—keep in a sealed glass jar for re-use, should last 1 month).</td>
</tr>
<tr>
<td>Stainless steel lost its shine</td>
<td>Full strength distilled white vinegar on a sponge.</td>
</tr>
<tr>
<td>Dirty porcelain</td>
<td>Baking soda on a damp sponge.</td>
</tr>
<tr>
<td>Chrome needs polishing</td>
<td>1 part club soda and 1 part distilled white vinegar applied w/sponge.</td>
</tr>
<tr>
<td>Clogged drain</td>
<td>Boil one cup of water, add 1 cup baking soda and 1 cup vinegar to boiling water (mixture will fizzle), and pour down clogged drain. Flush with water. Repeat if necessary until water runs freely.</td>
</tr>
<tr>
<td>Mould and mildew on surfaces</td>
<td>4-6 drops of this mixture with one cup of purified water, and 4-5 tablespoons of salt where you would ordinarily put coffee, add water, let mixture “breathe” as if would coffee were in it.</td>
</tr>
<tr>
<td>Mold and mildew stains on laundry</td>
<td>Scrub with a paste made with 1 part salt and 1 part lemon juice, let sit in sun, wash as usual.</td>
</tr>
<tr>
<td>Rust stains on surfaces</td>
<td>Make paste using 2 parts baking soda, 1 part water, scrub with toothbrush. Rinse well with water.</td>
</tr>
<tr>
<td>Streaked, dirty windows</td>
<td>Mix 1 part vinegar and 1 part water—use as you would glass cleaner.</td>
</tr>
<tr>
<td>Dull brass and copper</td>
<td>Mix 1 part lemon juice and 1 part baking soda; make paste and scrub.</td>
</tr>
<tr>
<td>Coffee percolator, dull, dirty</td>
<td>Put 4-5 tablespoons of salt where you would ordinarily put coffee, add water, let mixture “breathe” as if would coffee were in it.</td>
</tr>
<tr>
<td>Hard water deposits</td>
<td>Mix approximately (exact amounts aren’t critical) 4 ounces of hydrogen peroxide, 1/4 cup baking soda, and 1 drop of detergent into 1 quart water. Use immediately (once the hydrogen peroxide and soda become inert, it’s no longer effective). Spread over area with odor problem; solution should neutralise smell immediately. Discard unused portion. (You may want to do a test patch first. I would.)</td>
</tr>
<tr>
<td>Pet odours in carpets and upholstery</td>
<td>Mix 1 part vinegar and 1 part water and use sponge to clean grungy areas. This solution is safe for most commercial tiles. (Do not use on marble as solution is too acidic for porous surfaces.)</td>
</tr>
<tr>
<td>Dirty ceramic tiles</td>
<td>Mix 1 part vinegar and 1 part water and use sponge to clean grungy areas. This solution is safe for most commercial tiles. (Do not use on marble as solution is too acidic for porous surfaces.)</td>
</tr>
<tr>
<td>Toilet bowl rings</td>
<td>Use undiluted vinegar exactly as you would use a commercial toilet bowl cleaner.</td>
</tr>
<tr>
<td>Grass stains</td>
<td>Mix organic enzymes (available at whole food stores) with one tablespoon of water in ceramic or glass bowl, spread paste on the affected area, rubbing it with a toothbrush if seriously soiled. Let sit for an hour, wash as usual. Repeat if necessary.</td>
</tr>
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Polite Literature, Antiquities and Science: The Royal Irish Academy

By Michael D. Guiry

THE Royal Irish Academy was generally little known to the public until relatively recently when successive Presidents and Councils of the Academy pursued policies to open up the Academy to the public and to make the Academy more relevant to all aspects of Irish society. Now more people attend public meetings in the Academy and are more aware of the Academy, its publications and its mission.

The Academy was founded in 1785 and was granted a royal charter by George III in the following year. Although it currently has over 400 members from all walks of academic life, at first it was the privilege of the few, mostly the landed gentry, such as the Earl of Charlemont, its first President, and other gentleman scientists. That said, there have been many famous members: Francis Beaufort, Admiralty Hydrographer and originator of the Beaufort Wind scale; Charles Darwin, whose birth we celebrate this year; William Wilde, father of the redoubtable Oliver and accomplished physician and antiquary; William Rowan Hamilton, world-class mathematician; Henry Grattan, of Grattan’s Parliament; Robert Lloyd Praeger, Ireland’s most famous botanist and naturalist; Seamus Heaney, Nobel Laureate, and many more.

The Academy, known fondly in the universities as the “RIA”, is the Irish equivalent of the Royal Society in London and of the Académie des Sciences (Institut de France) in Paris. One cannot walk in and join any of these learned societies, but when you reach a certain academic eminence you may be quietly approached by a member or a group of members and asked if you would be willing to be “put up” for election. This exhaustive elective procedure involves getting scientifics on your academic worth from all over the world, and depends largely on your published work and reputation. You might be elected for 200 published works, or only 20 — a long list does not guarantee entry. If elected, you are permitted to use the letters M.R.I.A. (Member of the Royal Irish Academy) after your name, widely regarded as a great academic honour. Members must be resident in the Republic or in Northern Ireland, and are expected to promote and support the Academy once elected. Currently, only 20 members are elected each year: 10 from the sciences and 10 from the humanities (charmingly, if anachronistically, known as the Committee of Science and the Committee of Polite Literature and Antiquities).

So, what use is the RIA to Ireland? Firstly, it is important to recognize the best and the brightest of our academics, and to ensure that they can communicate effectively with one another and influence national policy in relation to academic activities and change. Secondly, the Academy has a plethora of projects of strategic national importance including the comprehensive Foclóir na Nua-Ghaeilge (a historical Dictionary of Modern Irish), the New Survey of Clare Island (a re-survey of Clare Island in Co. May, first surveyed in 1909-1911), the Irish Historic Towns Atlas project (no. 19, Dublin Part II, 1610 to 1756 has just appeared), the Archive of Celtic Latin Literature, and the Dictionary of Irish Biography, to mention but a few. Thirdly, the Academy advises the government on academic policy and has been particularly active in promoting consistent funding of the humanities, which are always underfunded in comparison to the sciences, and the encouragement of North-South co-operation.

The RIA publishes some journals (learned articles bound together and published at intervals), the most recent of which used to be known as the Proceedings of the Royal Irish Academy, Sections A, B and C. Section B was subtitled some years ago as Biology and Environment and now includes a whole range of cutting-edge environmental studies. It also publishes monographs, such as the recently published Our War: Ireland and the Great War (John Horne, Ed.), which deals most sensitively with the much-misunderstood involvement of the Irish, north and south, in the First World War. It is often forgotten that more than 200,000 of us fought in the trenches, even though conscription was never introduced in Ireland, despite attempts by the British Government in 1918.

Since 1851 the Academy occupies a fine Georgian building on Dawson Street, right by the Mansion House. Its extensive library has a unique collection of ancient Irish manuscripts of inestimable value including the Cathach, supposedly the Psalter of St Columba (521-597 AD), and dating from about 600 AD. Written in Latin on vellum with some ornamentation of the initial capitals of paragraphs and predating the Book of Kells, it is the earliest known example of Irish writing, although it is incomplete and many of the leaves are badly damaged. However, it has been extensively conserved by the Academy and is regarded as an fine example of early-manuscript conservation. The library also has a superb collection of books and journals widely appreciated and consulted by scholars the world over. The most recent publication of the Academy is a beautiful and detailed book, Treasures of the Royal Irish Academy Library.

Many of the Academy’s other artifacts, collected by its Members, including a goodly portion of the nation’s Celtic gold ornaments, are on permanent loan to the National Museum, where they are more accessible to the public than they would have been in Dawson Street.

The mission of the Academy is “vigorously to promote excellence in scholarship, recognising achievements in learning, direct research programmes and undertake its own research projects, particularly in areas relating to Ireland and its heritage.” In the 224 years of its existence it has done Ireland proud, and in these times of reconciliation of the diverse cultures of our two islands, we should be able to be proud of an Academy chartered by an English king, despite its royalist title; we should also be proud that the north-south division of this small island has not inhibited the Academy in its mission.

Further information of the RIA, its publications and its activities can be found on its website http://www.ria.ie.
Irish Garden Birds
How to Identify, Attract and Garden for Birds
By Oonagh O'Sullivan and Jim Wilson

Ireland’s Garden Birds is an absolutely indispensable book for birdwatchers. This book shows that in Ireland we have a wonderful past, which must be preserved for generations to come.

Irish readers: the sections on "Where to go..." to see specific wildlife is very much geared to people in Britain, however this does not take from the book. Every page or two the book gives wonderful "Top Tips" for beginners. This book would be a present to be treasured, whether one is 10 or 80 years old.

How can I stop climate change?
By Helen Burley and Chris Haslam

This is a new hardcover book from Friends of the Earth. It explains why the climate change is and the reality is that there are many simple and easy ways to increase one's awareness of what can be done to help the environment and our own health.

Tips include slowing down when driving to improve fuel efficiency by up to 30%, shifting to a higher gear at the right time (e.g., time a vehicle travelling at 60 kph in third gear uses 25% more fuel than it would at the same speed in fifth gear), and that walking is good for you - 4% faster and easier, reducing blood pressure, body fat, high cholesterol and of course doesn’t use fossil fuels! The book "Using Cleaner Energy" states that clean energy is vital if we want to clean up our act. Cleaner sources and how much energy they can supply is discussed, including wind power (with five myths about wind turbines), power from the sea, tidal barrage, wave power and undersea power. The book "In the Home" makes fascinating reading, covering such items as dishwashers, fridges, freezers, electric kettles and computers. There are excellent case studies throughout the book and projects undertaken by individuals and businesses. This book will get one thinking and acting on the road to environmental care.

The Farming Landlord - a guide to farming with nature in Clare
By PJ Gibson
Price: €50.00/2007

This book is primarily intended as a practical guide to "farming with nature" in Clare. Its purpose is to provide simple advice on nature conservation and protection of important habitats in the context of practical farming. The book includes eight profiles of Clare farmers who will demonstrate how they farmed and successfully incorporated environmental management into their farming enterprises. There are three sections in the book, the first an introduction to County Clare geology, ecology and geology. The second section is Farming the Farming Landland - its agriculture, water and waste. Section three, enhancing the farming landland - its nature conservation, habitats, wildlife corridors. This is a winner with its 500 magnificent colour nature photographs. It is a book for farmers throughout the country who want to improve their farmland. But above all it is a wonderful book for the non-farmers, as it gives them such an understanding of nature. It is a steal at €5.00, which is donated to Bothar by Clare County Council.

From Tide to Table
Everything You Ever Wanted to Know About Seafood
By Georgina Campbell
Price: €25.00/2008

As a nation we have never been great fish eaters, yet we have the finest seafood in Europe around our shores. Most of the older generation are familiar with having to eat fish on a Friday instead of meat, which we as Catholics had to "endure". Fortunately fish is now a much more welcome part of our diet today. It is still doubtfull whether fish is any fish of our European neighbours.

So there is no doubt that this "neglect" is due to people being unable to cook seafood in a proper and entertaining way. This book is described by the author as Ireland's first ever "seafood bible". We learn how to buy and store seafood and cook it using simple methods. There is a gem of a section on "Getting kids to eat fish". Top tips include offering fish to children as early as possible and getting older children involved in cooking and preparing food.

The preparation of fish and seafood has photographic descriptions of how to skin and de-bone round fish, to flit fish, prepare prawns, white fish and oysters, chowder. Quick & Easy: bill, place, monkfish, ling. Family Mid-WEEK Meals: smoked haddock, baked crab hotpot, warm mustard tuna, aromatic prawns. Quick & Easy: bill, plate, monkfish, ling. Family Mid-WEEK Meals: smoked haddock fish cakes, cheese-grilled pollock, baked cod.

This book takes the mystery out of cooking seafood, which has always been the Achilles heel for many Irish readers.

Heritage Landscapes of the Irish Midlands and selected counties
By BT Gibson
Price: €25.00/2007

The Irish Midlands represent a relatively unknown part of the country and is so often viewed as flat areas of little interest. This book divides the Irish Midland into three areas, each of which contains unique physical, archaeological and historical heritage. Section 1 - the Physical Landscape of the Irish Midland begins with its Geological framework and glaciation leading to the formation of the bogs and their exploration, the Water and the Soils and the climate each is so informative. Section 2 - Archaeological and Historical Landscape deals with Prehistoric Settlement, Arrival and Development of Christianity, Viking Ireland, 16th and 17th Plantation, the Farming and Modern Times. Section 3. Nine separate driving itineraries are described. Collectively these cover 4000 kilometres and each includes a range of physical, archaeological and historical features in the landscape. There are no detailed and the author makes each of the itineraries so alone. He guides one step by step and promises, visiting many villages and towns, historic buildings, old cemeteries and of course places like Clonmacnoise with its Round Tower and its 16th century Holy Cross. Every page has wonderful photographs of its archaeological and historical heritage, such as The Spire of Loyd ("Lighthouse") built in 1798, St. Flannan’s Oratory (c. 12th century) at Killaloe, and the 16th century Collins book shrine house in St. Kean’s Church, Kilmacduagh.

Kildare’s Natural Heritage
Edited by Joanne Browne
Price: Free from Kildare Co Co/2008

This publication includes an introduction to County Kildare’s habitats and it aims to provide an indication to the range of habitats in the country. There are coming under serious pressure through intensive agriculture, construction, peat extraction and pollution. The various chapters give brief summaries of the various habitat, the woodlands to visit among these - Donadea Forest Park, Kilmacolm Forest with a ringfort, the old oaks of Rahen. We learn that the level of hedgeweeds in Kildare is 10,305 km. In most parts of the country many of the woodlands were destroyed in the 1950s. This book aims to partly restore this national heritage, with a diversity of habitats. Underground is the Carragh Aquifer, an area of underground water, which is a major source of water supply. This aquifer supplies water to Hills of Allen and is one of the most extensive in Ireland. Three main rivers - the Liffey, the Slaney and the Barrow, together with the Grand and Royal Canals - flow through the county. There are other chalk based woodlands, wildlife habitats and town and villages. This is an excellent guide to the heritage of County Kildare.
Waterford now has its own County Flora

By John Akeroyd

A NEW County Flora* has filled a major gap in the knowledge of Ireland’s wild plants. It is not only an exemplary local Flora, but also an illuminating look at a botanically neglected Irish county. That’s not to say that botanists have completely ignored County Waterford, although few visited after the 1970s, heading off instead further west and north. Paul Green follows in the illustrious 19th century footsteps of Isaac Car-roll, H.C. Hart, Richard M. Barrington and Robert Lloyd Praeger, from an era Professor David Webb called Ireland’s “botanical heyday”. He has also absorbed the valuable contribution in more recent decades of Keith Ferguson, Kew botanist but native of Tramore, who generously and perceptively handed over his own records to an able younger enthusiast. Through dint of hard work and an astonishing nose for plants, Paul has made his own considerable mark and unique contribution. In short he has delivered the goods and done an absolutely superb job.

Here is a Flora that doesn’t digress on plant ecology or geography but gets right to the point. The author thoroughly covers the ground; he wanders far and wide; he returns to sites again and again; and he is out in the field throughout the year. He brings in friends to help and consults widely, though the final product is very much his own masterpiece. This is no committee Flora and is all the better for that – it is a special snapshot by a true expert. And an expert who’s mastered his adopted county in less than the twelve years since he began the project in 1997! Paul has used his particular skills as a field botanist with an almost magical eye for plants, and as a careful compiler and sifter of information. Thus full and accurate data are now available for future botanical and ecological work in Co. Waterford. He has provided both an inventory of rare or botanically exciting species and with data on common plants so often sidelined in such studies.

Paul leaves no stone unturned. He has really explored his county: woods, loughs, marshes, reed-beds, farmland, roadsides, walls, rubbish tips, around pubs and supermarkets and, of course, the cliffs and sand-dunes of the coast, and the mysterious marshes and woods along the tidal reaches of the Rivers Suir and Blackwater. He has even gone high up into the Comeragh Mountains, miles of Old Red sandstone moors and crags for the most part botanically poor and long ignored – and has been amply rewarded. He hasn’t just found scarce, under-recorded mountainy plants in rocky coves hardly explored since H.C. Hart was there in the 1880s, but has discovered Recurved Sandwort, a plant of the mountains of south and central Europe otherwise known in Ireland only from the Caha Mountains of the Cork-Kerry border. Sadly, “the empty red-brown bareness” of the Knockmealdown Mountains, to steal a nice phrase from literary Republican Ernie O’Malley, yielded Paul little of interest, but doubtless time will tell! And back at sea-level, he’s added Long-stalked Orache and Taschereau’s Orache, its hybrid with Babington’s Orache, from the muddy banks of the Suir, to the Irish flora. Both plants are hard to find and harder still to identify correctly. All the tens of thousands of records are computerized and many species are mapped on the basis of these data. But this Flora is no soul-less electronic database. Paul’s notes on ecology and distribution are an important source of information and a fascinating read. He includes subspecies, varieties, forms, even an early-flowering Goldenrod and flower colour variants such as white Heather. He includes obscure groups of plants such as the numerous bramble (Rubus) microspecies and provides full coverage of the garden escapes – with their correct names – that are an inevitably increasing element of the Irish flora. In the Introduction he provides useful notes on favourite botanical sites, where to go and what to look out for. He admits to what he’s not done (little) and follows up and catalogues his own errors (few)!

Here is a model County Flora, showing what enthusiasm, ability and application can achieve. The publisher, the National Botanic Gardens of Ireland, should be congratulated for backing a winner. And Paul Green should be proud of his substantial contribution to the study of the Irish flora. I hope his studies now take him eastward, to the even more interesting County Wexford.


Dr John Akeroyd, who has studied the Irish flora for 30 years, edited “The Wild Plants of Sherkin, Cape Clear and adjacent islands of West Cork” (1996) and is author of “A Beginner’s Guide to Ireland’s Wild Flowers” (2008).
Prehistoric Super-Shark

Imagine a Great White Shark as long as a single-decker bus!

That was the prehistoric shark Carcharodon megalodon - the biggest predatory fish that ever lived. Megalodon is thought to have lived as long ago as 18 million years and to have become extinct during the Pleistocene epoch some 1.5 million years ago.

Scientists believe that Megalodon became extinct due to an abrupt cooling of the Earth's climate, together with changing ocean circulation and shortage of food, which are also thought to have brought about the extinction of another large-bodied marine predator Basilosaurus (seen right battling with Megalodon) at around the same time.

"Megalodon" (which means 'big teeth') could grow up to 18 metres long - three times longer than today's Great White Shark (shown left in green) and weighed up to 70 metric tonnes. It is likely to have fed on prehistoric whales.

The probable size of Megalodon has been estimated from the size of fossil teeth at around 47 metric tonnes. Teeth from this ancient shark have been found all over the world - from Europe, North America and Japan in the north, to South America, Australia, New Zealand, South Africa and India in the south.

Smart Sharks?

Sharks are far more than the dumb "eating machines" shown in books and films, recent studies have indicated that many shark species possess powerful problem-solving skills, similar to dolphins and whales. Indeed their brain-mass-to-body-mass ratio is similar to those of mammals and other higher vertebrate species.

Whale biologist Peter Best reported as many as seven White Sharks apparently working in concert to move the carcass of a partially beached Pygmy Right Whale (Caprea marginata) into deeper water in 1987 at Smitswinkle Bay, South Africa to make it easier to eat. Sharks have even been known to engage in play (a trait also observed in dolphins and monkeys). Porbeagle sharks have been seen repeatedly rolling in seaweed and have even been observed chasing an playmate trailing a piece behind them.

Man Bites Shark . . !

According to Joe Borg, the EU Fisheries Commissioner, “The latest information we have confirms that human beings are now a far bigger threat to sharks than sharks ever were to us.” It is estimated that an average of 38 million sharks are killed every year.

Due to demand for shark products such as shark's fin soup on the Asian market, along with the cosmetics industry for shark liver oil, world catches of sharks grew from 600,000 to 810,000 metric tons a year between 1984 and 2004. These huge catches, combined with the fact that sharks are relatively slow-growing compared to other fish species and produce small numbers of young, make them very vulnerable to overfishing, with at least a third of shark species now being overfished.

The practice of cutting off sharks' fins to make shark fin soup and throwing the rest of the shark back into the sea is already illegal in European waters. Now, to give even greater protection to sharks in European waters, the European Commission is drawing up an action plan that will limit fishing in areas where shark populations may be under threat.
TWO SUCCESS STORIES

By Declan Murphy

NOWADAYS, with all the destruction of habitat, it is not unusual to read that many species of birds are declining and becoming scarce. These include, amongst others, formerly common species such as the Corncrake. Despite these worrying trends there are some species which have actually increased their European range and have colonised Ireland where previously they only occurred as vagrants. Two of our recent success stories are the Little Egret and the Great-spotted Woodpecker.

Little Egret

A common species in the Mediterranean this is a distinctive member of the Heron family. Considerably smaller than a Grey Heron, it is pure white in colour with a black bill. The legs are also black but the feet, easily seen in flight, are a bright yellow. Until the mid 1990’s Little Egrets occurred as a vagrant, chiefly in the spring but also in the autumn and less regularly in the winter. In the spring and early summer breeding adults develop plumes on their head and chests which were much sought after for the Victorian fashion industry. The first breeding records occurred in the mid 1990’s when several pairs bred in a mixed heronry in Co. Cork.

Little Egrets can be seen all around the Irish coastline but are especially common on the southern coast. They can be seen in a variety of habitats including estuaries, rivers and marshland and can be seen singly or in small groups. They feed on small fish and crustaceans and are very active feeders, chasing their prey through shallow water unlike the Grey Heron which hunts by stealth.

The nest is usually located amongst Grey Heron colonies and is made of a platform of sticks located at the top of a tree. They usually lay 4-5 eggs which hatch after 21 days. The young are fed on regurgitated food and leave the nest after 30 days. They then clamber around the trees for another 10-15 days before finally leaving the nest to forage alongside their parents.

Great-spotted Woodpecker

Although widespread throughout the UK Great-spotted Woodpeckers were extremely rare in Ireland until the past few years. Usually only one or two sightings were reported each year from a wide variety of locations throughout Ireland. It was generally thought that these birds were of Scandinavian origin rather than from the UK, as the Scandinavian birds are migratory unlike the sedentary birds in the UK.

In the past 2-3 years there have been several reports of woodpeckers across a wide area of County Wicklow and last year several pairs were heard drumming and the first young were seen. In Ireland Great-spotted Woodpeckers are usually found in oak woodland with coniferous woodland either nearby or mixed in with the oaks. Both sexes can be heard drumming in the springtime and their loud ‘PIK’ ‘PIK’ calls are often the first indication of their presence. They are often reported at peanut feeders during winter months and the first young bird seen was actually at a peanut feeder alongside a Great Tit.
G eology is the study of the Earth, what it is made of and what has happened to make it the way it is today.

Geology mainly involves the study of rocks, as well as making maps of what lies beneath the ground. Geologists are people who study the rocks that make up the Earth. This study allows the geologist to trace the history of the Earth, to understand how it is now and how it will be in the future.

If you don’t know what ‘geology’ means, consider for a moment how it impacts on your life. Here are just a few examples:

- Your home is probably made from concrete, stone and slate;
- The heating in your home and school probably comes from oil or gas, turf or coal;
- Some of the water you drink comes out of the ground;
- The roads you travel each day are made from concrete, stone and tar; and the car you travel in is usually powered by oil;
- The factory machines that make the clothes you wear run on oil and are made from substances drawn from the Earth’s resources, such as steel (which comes from iron ore);
- The jewellery people wear contains natural resources, such as gemstones and gold, for sparkle and beauty!

So you see, the rocks and geology all around you enable you to live, and geologists can make your life better because of their knowledge of the Earth.

R ocks are the building blocks of Planet Earth. They are literally all around us, important in every element of our lives.

The mountains that make Ireland so beautiful are made of rock, the homes we live in are often made of rock, indeed the very ground we walk on is mainly rock – this is the Earth’s crust.

F ossils are the remains of plants and animals preserved in rock. Fossils are very important because they help us understand animal and plant life that existed millions of years ago. Geologists also use fossils to date rocks (and the Earth), as certain fossils can be associated with rocks of a particular time.

M aps have been around since early humans. It is thought that people made maps before they wrote down their languages. Mapping in Ireland is carried out on behalf of the Irish State by the Ordnance Survey of Ireland (OSI) and the Geological Survey of Ireland (GSI). In simple terms, OSI maps the ground relief and man-made features, and GSI maps the rocks beneath the soil and glacial deposits.

A cave is a natural hollow in rock through which a human can step. Caves can occur both underground or over the ground. Some caves are created by the constant battering of the sea against rocks and some are created as a result of volcanic activity. Mostly however, caves are formed underground by the action of water on soft rock such as limestone.

H eritage is anything that was valued by generations before us and which we, in our lifetime, must protect for future generations. This could be anything from places to languages to objects. Ireland’s geological heritage is very important. It gives us an idea of how Ireland was formed and what happened before we came along. Different rock types also support many special plant and animal habitats. Geological areas like these need to be protected so that they are preserved for future generations.

The newly published “An A to Z of Geology”, explores the fascinating world of rocks and geology – a world of volcanoes, tsunamis, earthquakes, diamonds, gold and even dinosaurs! Here are some excerpts...
Navigating Ireland

Using only each letter of the alphabet once, fill in the missing letters below and then match up the names with the locations on the map. The remaining six letters will spell the name of the most common mineral found in rocks.

E_PADDING GEOLOGY ON A JOURNEY AROUND IRELAND

1. _IANT'S CAUSE_AY 6. CO_PER COA_T
2. ARG_MIN__ 7. DUNM_RE CA_E
3. _LIFFS OF _OTHER 8. SUGAR LOA__
4. T_E__URREN 9. BOG_OF ALLE_
5. TETRAPOD TRAC WAY __ __ __ __

ABCD EFGH IJKLM NOPQRSTU VWXYZ

GEOLGY WORDSEARCH

Find the following page titles from “An A to Z of Geology” in the wordsearch below:

1. Large inland bodies of water.
2. Very long periods of time.
3. A small solid lump of gold.
4. Something an archaeologist would do.
5. The bottom of the sea or ocean.
6. Flowing water is in this state.
7. An extremely cold period in time.
8. A very hard gemstone.
9. The planet on which we live.

ANSWERS:

1. Lakes
2. Ages
3. Nugget
4. Dig
5. Seabed
6. Liquid
7. Ice Age
8. Diamond
9. Earth

It’s a Landslide!

Can you fill in the answers in the grid below? The first letters of all the answers spell out the word "LANDSLIDE".

ANTS:

Feeding your passion for fish

Skretting delivers outstanding nutrition and services to fish for sustainable production of healthy and delicious fish.

Feeding your passion for fish
Gaisce – The President’s Awards

Working with the Niall Mellon Township Trust

By Seoighe Kearney

The adventure of a life time always seems to begin with an early rise and a lot of travelling. For me and over 2,000 other volunteers our story is no different. Cape Town, South Africa was waiting. The BLITZ starts here.

In November of 2008 I travelled to Cape Town with the Niall Mellon Township Trust. This adventure was tied in with Gaisce – The President’s Award, where you undertake a challenge in four areas; Skill, Community, Physical and Adventure. This escapade was my adventure for the silver award.

I got involved with the Niall Mellon Township Trust through my father who had been the year before. He returned with pictures of the conditions that children and adults alike were living in and I was stirred by the horrendous environment. This encouraged me to raise the €10,000 to return the next year with him. This was one of the most difficult parts of my mission. However after six months of continuous fundraising, the generous donations of the public made it possible for me to bring my deepest dream to life.

The Kick Off

After a thirteen hour flight we landed in Cape Town airport, to be individually greeted by the man himself, Niall Mellon. In a pioneering venture, Niall met with community leaders and undertook the extraordinary task of replacing 450 corrugated iron shacks with proper brick houses. In 2003, he organised 150 volunteers from overseas each raising €3500, to travel 6000 miles to Imizamo Yethu, to build 25 houses in 9 days. And after six years the charity is growing in an enormous rate, building 5,000 homes in 2008.

In the Beginning

My second morning in South Africa began at 6 a.m. Shuttle buses left the hotel at 6:30 a.m. beginning the 45 minute journey to Khayelitsha. On either side of the motor way, during this journey, the horizon was littered with thousands and thousands of shacks. Khayelitsha itself has a population of 1 million people, only one of the towns in South Africa.

Midway Through

After a slight injury my foreman appointed me to a new position. As each team were requiring materials and equipment, I now had the responsibility of ensuring that if something was needed I already had it there. It may seem to be a straightforward job but I ensuring you it is a difficult position to hold. This was the arrangement for the remainder of the week. It was by far the most exhilarating experience of my life.

Shack Visit

On one of the days the group had the option of going to see the homes of the residences of Khayelitsha. There only one child out of three can afford to go to school. The environment in which these children are being brought up is giving them no hope for the future. Can we justify and allow this treatment of children to continue? Their innocence is being stripped of them at a very young age. However, by committing myself to the Niall Mellon Township Trust I can honestly say that I am giving these children a fair chance at life. A family’s stability begins with having a safe place to call home.

The Niall Mellon Township Trust has given me the opportunity to experience a life-changing encounter with the people of South Africa. I would like to thank all those who donated, helping to make this possibly for me and I would also like to congratulate the charity on its success.

If you would like to make a donation to this charity and help me on my way again please contact Seoighe at seoighe@inbox.com. Thank you.

Seoighe’s PAL (President’s Award Leader) is Helen Carey. If you are interested in entering for a Gaisce Award please contact: Gaisce – The President’s Award, The State Apartments, Dublin Castle, Dublin 2. Tel: 01 4758746. Email: mail@gaisce.ie or check out their website: www.gaisce.ie
The RNLI Fleet

The RNLI has an active fleet of more than 300 lifeboats, ranging from 5m to 17m in length, and a relief fleet of about 100 boats. The current fleet also includes four active and one relief hovercraft. RNLI lifeboats can be divided into two categories: all weather lifeboats and inshore lifeboats. Different kinds of lifeboat are needed for different places. The class of lifeboat at a particular station depends on the geography of the location and the rescues it carries out. (All text and photographs courtesy of www.rnli.co.uk)

**The RNLI Fleet**

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<td>Moored afloat</td>
<td>Moored afloat</td>
</tr>
</tbody>
</table>

**RNLI & Education**

In the RNLI, raising awareness, particularly among young people, is vital, as they will be the crews, fundraisers and supporters of the future. The RNLI educates children and young people about its work, how they can help and how to stay safe on or by the sea. Regional education managers work with teams of volunteers to run a variety of educational initiatives. For more information visit: www.rnli.org.uk/shorething

The Severn class lifeboat was introduced in 1995 and shares the same hull shape as the Trent class. It carries a powered Y boat that can be launched and recovered by a lightweight crane to enable rescues close to shore. Its propellers are protected so it can take ground without damage.

The Atlantic 85 is a rigid inflatable lifeboat, introduced in the latter half of 2005 as the latest development of the B class. It has a manually operated self-righting mechanism and is capable of being beached in an emergency without sustaining damage to engines or steering gear. The Atlantic 85 is fitted with radar and VHF direction finding equipment and can be operated safely in daylight in a force 6/7 and at night in a force 5/6. The details given are for the Atlantic 85 that was introduced in 2005.

The Severn class lifeboat was introduced in 1995 and shares the same hull shape as the Trent class. It has a manually operated self-righting mechanism and is capable of being beached in an emergency without sustaining damage to engines or steering gear. The Severn class lifeboat was introduced in 1995 and shares the same hull shape as the Trent class. It carries a powered Y boat that can be launched and recovered by a lightweight crane to enable rescues close to shore. Its propellers are protected so it can take ground without damage.

**The RNLI Fleet**

<table>
<thead>
<tr>
<th>Category</th>
<th>All-weather</th>
<th>All-weather</th>
<th>All-weather</th>
<th>All-weather</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>16m</td>
<td>14m</td>
<td>17m</td>
<td>9m</td>
</tr>
<tr>
<td>Range</td>
<td>250 nautical miles</td>
<td>250 nautical miles</td>
<td>240 nautical miles</td>
<td>4 hours at maximum speed</td>
</tr>
<tr>
<td>Speed</td>
<td>25 knots</td>
<td>25 knots</td>
<td>3 hours at maximum speed</td>
<td>4 hours at maximum speed</td>
</tr>
<tr>
<td>Weight</td>
<td>30 tonnes</td>
<td>8.5m</td>
<td>18 tonnes</td>
<td>3.5 tonnes</td>
</tr>
<tr>
<td>Crew</td>
<td>6</td>
<td>6</td>
<td>3/4</td>
<td>3</td>
</tr>
<tr>
<td>Construction</td>
<td>Fibre reinforced plastic (FRP)</td>
<td>Steel</td>
<td>Fibre reinforced composite</td>
<td>Aluminium alloy with closed cell polyethylene foam cell</td>
</tr>
<tr>
<td>Launch type</td>
<td>Slipway or afloat</td>
<td>Slipway or afloat</td>
<td>Moored afloat</td>
<td>Moored afloat</td>
</tr>
</tbody>
</table>

**The RNLI Fleet**

<table>
<thead>
<tr>
<th>Category</th>
<th>Inshore</th>
<th>Inshore</th>
<th>B Class (Atlantic)</th>
<th>E Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>5m</td>
<td>9m</td>
<td>3.9m</td>
<td>3.9m</td>
</tr>
<tr>
<td>Range</td>
<td>3 hours at maximum speed</td>
<td>4 hours at maximum speed</td>
<td>20 nautical miles</td>
<td>20 nautical miles</td>
</tr>
<tr>
<td>Speed</td>
<td>25 knots</td>
<td>40 knots</td>
<td>22 knots</td>
<td>22 knots</td>
</tr>
<tr>
<td>Weight</td>
<td>436kg</td>
<td>165 kg</td>
<td>2.4 tonnes</td>
<td>2.4 tonnes</td>
</tr>
<tr>
<td>Crew</td>
<td>2/3</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Construction</td>
<td>Hypalon coated polyester</td>
<td>Hypalon coated polyester</td>
<td>Bonded diuron hypalon polyester</td>
<td>Bonded diuron hypalon polyester</td>
</tr>
<tr>
<td>Launch type</td>
<td>Trolley or davit</td>
<td>Trolley or davit</td>
<td>Trailer / trolley</td>
<td>Trailer / trolley</td>
</tr>
</tbody>
</table>

Hoverscots were introduced into the fleet in 2002. They are able to operate in mud, sand and very shallow water and are particularly useful for shoreline searches. Lift is provided by a build up of air pressure under the craft and is held against the craft by large fans mounted on the back that act in the same way as aeroplane propellers. Steering is provided by aerofoil-shaped rudder blocks located behind the propellers.
Seaford and the Global Community

By Mike Ludwig

The world’s ocean resources are experiencing both major impacts and some modest, potential benefits from the unfolding events caused by human activities. Global climate change is beginning to be visible as sea level rise, changes in coastal water temperatures and water acidity alter life in the oceans.

Meanwhile, the recent roller-coaster ride of the economy is causing people to realize that our world of separate nations has become intertwined and events in one sector can have profound impacts on many others. Curiously, our situation is comparable to the events occurring in the ocean. The consequences of overharvesting fishery stocks and, more recently, the changing climate are significant events.

Now we are facing economic challenges that are influencing the ability to study these events even though all three situations are not fully realized and only partially understood.

Climate change is causing some species to relocate making them harder to capture. Last year the price of fuel went through the roof and supplying seafood became more costly. Now, as the world economy is struck by job loss, declines in income and spending, seafood is becoming more expensive and consumption is declining. Hardest hit by these wild swings in costs, supply and demand are the fish farmers that must compete with traditional fishing practices in a shrinking market. Farmers pay to raise a crop. Fishermen can target the more valuable species but that can mean more discarding of less valuable or smaller fish and more effort.

Aquaculture can reduce the need to harvest wild fish and create the opportunity to increase population size. But what if the places where we grow or capture fish are no longer able to support their survival? Fish are losing their homes, finding it harder to feed themselves and having to move to places where conditions could be worse than what they left.

Heavy harvesting of ocean fish continues even as global climate change is occurring. The impacts of overfishing, the evolving changes in fish habitat and habitat use patterns are causing researchers to conclude that some species may not be available in coming years. Studies are revealing that species appear to be relocating but the moves can create problems as well as benefits. In some cases, the habitat functions and values that support a community food web may no longer be available. Sediment characteristics and current patterns at new locations may preclude needed benthic communities. And, the species that have not or can not relocate can suffer as well. For instance, winter flounder populations have been declining. The species generally return to their place of birth to spawn. The affinity for their place of birth may preclude the ability to relocate as conditions change. But, the species spawns in winter relying on cold water to protect the young from most of their predators. By not moving they are losing the protection afforded them by the winter. Warmer water on spawning grounds has enabled predators like shrimp to be active and feed on flounder eggs and larvae. Fewer young fish means there are fewer to grow, spawn and be harvested. We’re overfishing the adults and the number of replacements is declining. It is a tough time to be a winter flounder.

Fishermen and resource managers alike need to collect information to understand what is happening and what might be done to better manage fishery stocks. Now, just as we are beginning to see changes occurring in the natural world, obtaining the funding to study them is declining. From Universities to Government Agencies and throughout the private sector, the sources that provide financial support for this vital research are shrinking in number and the amount of money they can provide. How can the funding levels be sustained? We need fish and, it appears, they may need us.

That’s a global economy! All this bad news seems to overwhelm the occasional piece of potentially good news. It is hard times but the times may provide opportunities for natural renewal of some resources. Less fishing means more fish can grow to larger sizes. Larger fish produce more eggs and it takes fewer large fish to maintain or increase a population. The recovery of the fisheries during World War II is an example. Other benefits may occur from placing alternative energy generation systems in the ocean. The structures needed for those systems can provide habitat and shelter creating conditions similar to those in a marine protected area or sanctuary. Studies of offshore oil rigs have provided good evidence that putting a structure in the ocean can not only concentrate fishery resources but create new places where fish can live, grow and add members to a population.

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