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Editorial: Marine Research: A Need to Listen

By Matt Murphy

In the past decade marine research in Ireland has received major funding from both government and the EU. I believe it is now time for an in-depth independent examination be undertaken into how that funding has benefited the Nation and how we should be spending our limited funds that will be available in the coming years. One must ask have we been getting value for that investment. Has there been consultations as to what is needed? Has there been duplication? Is the funding being spread too many bodies/institutions? It must be pointed out that EU funding will be more difficult now with the enlargement to 25 member countries. There will not be the pro-rata increase in the finances being dispensed. Already researchers are finding it much more difficult to access EU funds. The waters, both coastal and offshore around Ireland, have huge economical potential, both environmentally and industrially. We have missed many an opportunity to benefit from our full potential. I would suggest a major factor has been a lack of cohesion between the various bodies who disperse the funding, with the finger pointing mostly at the Marine Institute. There is a definite lack of consultation between the latter and others.

Indeed there is general disquiet that the Marine Institute is losing touch with reality and the interests and needs of the fishing industry as to what these people, who are at the coalface, believe is needed in research.

Never in the history of the Irish state has so much funding been made available for marine research. Therefore it is imperative that the right projects are funded and the monies not wasted, whether it be from academia or institutions, including the Marine Institute’s own scientific research teams.

Annually a large amount of funding is allocated to the operation of the Marine Institute’s two research vessels. The Celtic Voyager and The Celtic Explorer. Questions need to be asked as to whether too many projects are being fitted into their annual programmes. It has been suggested that there may be an attempt to please as many people as possible. There is a view that much ship time should be allocated to a project so that the maximum benefits can be derived from the time at sea. There is a believe that some projects being carried out by the two vessels would be better undertaken by commercial vessels especially with regard to fish stocks. It would be more economical and so more essential data could be gathered without extra cost.

What consultation is there between the Marine Institute and other state bodies such as BIM, who have the role of developing and marketing Ireland’s seafood. They, with Udaras na Gaeltachta, also fund development and applied research in aquaculture. Do the three bodies meet annually on an equal basis to agree on what research is necessary? As important are the views of the fishing industry. Scientists worldwide rarely consult fishermen as to what research is needed yet they have huge knowledge of the stocks in the seas. Maybe we should take a leaf from the fishermen and scientists in Nova Scotia, Canada, who meet regularly to agree projects and then work together to undertake the research. If the Marine Institute does not see it necessary to have roundtable consultations then there is an immediate onus on BIM to sit down with the industry to draw up a programme for the applied research and development needed by the commercial fishing industry. Fishermen are very concerned that there is serious imbalance in the funding for fisheries by the Marine Institute in their annual research budget. The industry is now on its knees and unless fish stocks can be properly researched and managed there will be mass exodus from the industry. At the same time BIM and Udaras na Gaeltachta must agree a way forward for aquaculture, which is an essential industry for our coastal waters. The salmon farming industry is at present only producing around 10,000 tonnes annually, down from 17,000 tonnes three or four years ago. Only a joint effort on the part of both BIM and Udaras will bring the tonnage up to 20,000 tonnes. Research and management of sites is necessary to be be found or there will be little left of the industry. The Central Fisheries Board should also have input, as they have much to offer with their involvement with wild salmon.

We have a thriving shellfish industry in mussels and oysters. But there is a shortage of mussel seed. Can it be solved? Management of the seed areas, with research, is essential. New species can be farmed but such research can be carried out for years. There has been little success with sea urchins, abalone and seaweeds – each with possible potential. Much funding is going into these species, yet something is wrong that we cannot crack the barrier to commercially farm them. New fish species such as turbot, halibut, sole and cod are being farmed in Europe. Is there any place for such development in Ireland? If so then let us get serious and put proper investment money into applied research and development. We must look at countries like Norway and France and see how they have achieved their successes.

It is my belief that the marine research monies are being spread among too many institutions. Surely we should have one major centre of academic excellence - perhaps University College Galway – that will act as a focal point, especially for the aquaculture industry. University College Galway (UCG) should have that role. Originally, years before the Celtic Tiger arrived, it had been decided that UCG would have responsibility for Marine research in Ireland. The reasons it did not were self-inflicted and Galway lost a wonderful opportunity to lead. That must be put right. UCG has always had an underfunded Oceanography Department. We need a strong, vibrant centre of oceanography. We know so little about such things as ocean movements and the plankton around our coasts.

This look at marine research is but one aspect of what we must do to fulfil the job potential of the vast seas around our coast and at the same time protect it environmentally. In coming issues of Sherkin Comment we will have articles on what has to be addressed in Ireland’s freshwater and marine environments. We will also be giving reasons why the Marine Institute should be solely a funding agency and its research wing a standalone institute with its own Director.
**Manx Shearwaters**

By Oscar Merne

ONE of Ireland’s most important breeding seabirds is the Manx Shearwater, yet it is one of the species we know least about. This is because they spend most of their time out on the ocean and come ashore to breed only on the darkest of nights. Even then, most of their colonies are on uninhabited and often inaccessible islands around our coast. Most people are completely unaware of their existence!

Because of the nocturnal habits of the Manx Shearwaters, and the remoteness and inaccessibility of their nesting colonies, it is not surprising that we had only a rough idea of relative numbers of breeding birds, e.g. “a few pairs”, “several hundred”, “1,000 occupied burrows”, etc. However, by the time the Seabird 2000 project started seabird researchers had developed a new method of censusing Manx Shearwaters. This involved using taped calls of shearwaters to evoke responses from occupied burrows, and this could be done during daylight. The extent of the colony was mapped and measured, and the density of burrows per unit area calculated. The proportion of these occupied (as determined by the tape responses) was applied and the whole colony size was then calculated. This methodology was applied to the Irish colonies by researchers from BirdWatch Ireland, funded by National Parks & Wildlife Service, Department of the Environment, Heritage & Local Government.

The Manx Shearwaters are medium-sized black and white tube-nosed seabirds which, as their name suggests, appear to shear the surface of the sea with their long, pointed, stiff wings, as they utilise the winds and air currents and eddies to glide effortlessly over the waves in search of shoals of small fish. Others familiar with Manx Shearwaters were the lighthouse keepers on islands such as the Great Skellig, Inishtheargait and the Bull Rock off the southwest coast, where large breeding colonies are found. On dark, foggy nights the beams of the lights reflect off the brilliant white underparts of the shearwaters as they fly in from the ocean to their nesting burrows. This experience is not simply visual: the returning birds emit loud crowing calls, which their mates on duty in the burrows respond to, thereby facilitating location of the nest in the dark. The final group of humans familiar with this enigmatic species are the ornithologists who study them – either by observing their diurnal movements and migrations from prominent headlands, using powerful binoculars and telescopes, or by visiting the nesting islands to census the breeding birds and ring them and their chicks.

Most of the breeding now thought some of these may not have been breeding colonies, but simply observations of non-breeding birds calling at night at likely-looking sites in search of an occupied colony. A few such sites may have been occupied in the past but mammalian predators such as feral cats and brown rats may have exterminated them. A couple of sites near Greater Dublin may no longer be used because “light pollution” may now deter the birds. As mentioned earlier, Manx Shearwaters come ashore only on the darkest of nights as they are very vulnerable to predation by large gulls and they have a better chance of avoiding predators under cover of the dark.

Because of the nocturnal habits of the Manx Shearwaters, and the remoteness and inaccessibility of their nesting colonies, it is not surprising that we had only a rough idea of relative numbers of breeding birds, e.g. “a few pairs”, “several hundred”, “1,000 occupied burrows”, etc. However, by the time the Seabird 2000 project started seabird researchers had developed a new method of censusing Manx Shearwaters. This involved using taped calls of shearwaters to evoke responses from occupied burrows, and this could be done during daylight. The extent of the colony was mapped and measured, and the density of burrows per unit area calculated. The proportion of these occupied (as determined by the tape responses) was applied and the whole colony size was then calculated. This methodology was applied to the Irish colonies by researchers from BirdWatch Ireland, funded by National Parks & Wildlife Service, Department of the Environment, Heritage & Local Government.

With the Manx Shearwater spending most of its time out at sea, many people are unaware of its existence. Exceptions to this are fishermen and seafarers who are familiar with these medium-sized black and white tube-nosed seabirds which, as their name suggests, appear to shear the surface of the sea with their long, pointed, stiff wings, as they utilise the winds and air currents and eddies to glide effortlessly over the waves in search of shoals of small fish. Others familiar with Manx Shearwaters were the lighthouse keepers on islands such as the Great Skellig, Inishtheargait and the Bull Rock off the southwest coast, where large breeding colonies are found. On dark, foggy nights the beams of the lights reflect off the brilliant white underparts of the shearwaters as they fly in from the ocean to their nesting burrows. This experience is not simply visual: the returning birds emit loud crowing calls, which their mates on duty in the burrows respond to, thereby facilitating location of the nest in the dark. The final group of humans familiar with this enigmatic species are the ornithologists who study them – either by observing their diurnal movements and migrations from prominent headlands, using powerful binoculars and telescopes, or by visiting the nesting islands to census the breeding birds and ring them and their chicks.

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Photos: © Oscar Merne

Above: The west ridge of Puffin Island, Co Kerry, with Skelligs in the background. Manx Shearwaters coming ashore at night to breed. Their main colonies are on the West Cork and Kerry Islands, with outlying ones on the Copeland Islands (Co. Down) and Great Saltee (Co. Wexford).

Oscar Merne recently retired as head of the Bird Research Section of National Parks & Wildlife Service, Department of the Environment, Heritage and Local Government.
By Rosie Solbé

**JUST before Christmas, 1935, a one-hundred year old man died in Bangor, North Wales. This event should have been world news but in fact it caused only local interest. So who was this man and why should he have been world famous?**

The man was a vet. In fact he has been called “The Father of the Veterinary Profession”. His name was Griffith Evans and he was born in 1835 in mid-Wales, the only son of a farmer. He was a clever child successful and highly respected locally. Like his parents Griffith Evans had a strong social conscience, and, anxious to use his medical skills, he applied to be allowed to work on the front line of the American Civil War. The British Embassy in Washington told him this was impossible but he persisted and was taken to meet President Lincoln who was so impressed by Evans’s sincerity and genuine desire for knowledge that he issued an order that Griffith Evans be allowed to travel where he wished on condition that he gave medical assistance to the wounded wherever this was needed. Thus for two years Griffith Evans acted as a medical assistant all along the Northern Army’s lines - always wearing the uniform of a British Army Officer!

After eight years away he returned home to marry Katie James who had waited for him all that time and they settled in London where he worked as a vet in the Army Service Corps. But returned to study at King’s College Hospital, the Royal Ophthalmic Hospital (Moorfields) and at the London Hospital.

In 1877 and 1878 he and Katie went to India, leaving their three little daughters behind. In India his first task was to investigate a fatal disease affecting army horses. He became convinced that the disease (which later proved to be anthrax) was caused by a parasite in the blood. This was a year before Louis Pasteur published his “Germ Theory” (1878) suggesting that disease could be caused by living organisms. Evans also investigated another fatal disease of horses and camels - a wasting disease known as “surra”. After careful examination of samples of the blood of infected animals he concluded that this too was caused by a blood parasite. He requested permission to use the infected blood to try to induce the disease in healthy animals to show that the parasite did cause disease but the authorities were totally opposed to such an idea – as a vet it was Evans’s job to prevent disease not to cause it. Evans produced microscope slides of the blood of infected animals “swarming” with the micro-organisms later named after him, Trypanosoma evansi (a parasite related to the one we now know causes Sleeping Sickness in human beings) but the authorities were adamant that micro-organisms in the blood of a living animal could not cause disease and were only there because the animal was sick. However, with the permission of the Governor of the Punjab, Evans carried out a series of experiments inducing surra in healthy horses and camels using the freshly drawn blood of diseased animals. He also showed that if infected blood was drawn and left to stand for 20–24 hours the micro-organisms disappeared and the blood no longer caused the disease. He sent his report to the Veterinary Journal in 1880, but it was ignored and finally destroyed. However, he sent copies of his report to both Louis Pasteur and Robert Koch both of whom, to quote Evans “thought there was something in my theory”; and in Europe fifty years later his report was hailed as a masterpiece.

In 1917 Evans, speaking of his work to a medical audience, asked them to remember that his report had been published “...some time before Koch published his classical postulates.”

Griffith Evans was sent back to England in 1885 because the Army authorities were convinced that the Indian sun had got to him and addled his brain! He continued his research and was given the go-ahead to see if his Trypanosomes could pass from a rat to a monkey, but at the special request of Queen Victoria his licence was revoked as the Queen had a strong dislike of experiments on animals. Evans retired from the army in 1890 and settled in Bangor, North Wales, where he became a lecturer in Veterinary Hygiene in the Department of Agriculture at the University College of North Wales, Bangor for the next twenty years. His outstanding work was finally recognised in Britain. In 1913 he was granted a Distin­guished Service Pension; in 1917 Liverpool University awarded him the Mary Kings­ley Medal for “Distinguished Scientists who have Assisted the Cause of Tropical Medi­cine by Original Research”; the University of Wales conferred on him the degree of D.Sc in 1919 and he was made a Freeman of the Borough of the City of Bangor in 1931. However it is sad that today this very important scientist remains largely unknown despite his original work, whereas the names of Pasteur and Koch are recognised internationally.

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Dr Rosemary Solbé is a retired schoolteacher/lecturer and is Secretary of the North Wales Branch of the Institute of Biology.
By Peter Marcalus

THREE dynamics are coming together that can potentially influence the U.S. papermaking and recycling industry. The outcome of these three influences could create dramatic changes within the papermaking industry that will result in industry job losses and higher costs for recyclable material collections for U.S. municipalities.

The China Syndrome: China is coming into its own as a major consumer of energy, steel, paper and other raw materials to feed their expanding manufacturing infrastructure. This is required for their domestic economic market growth and to fill China’s trend as the world’s predominant exporter of consumer goods.

Specific to the export of recovered paper fibre from the U.S., in 2004 America will sell over 1.4 million (standard) tons of waste paper to export markets. Over half of that tonnage will be consumed by Chinese paper makers.

China’s growing appetite for U.S. recovered fibre comes at the same time as America struggles to make an economic recovery from its four-year recession. During this recession and even today, all U.S. paper makers faced increases in fibre, energy prices, labour and insurance costs and reduced finished goods prices. Cost increases combined with decreasing finished goods demand, caused many U.S. paper makers across several market segments to incur slowdowns to reduce the supply of their finished goods in order to match the market’s pared-down demand. Another consequence of rising costs has been the permanent closures of several independent paper factories and the layoffs of thousands of workers.

Several leading research groups feel China’s hunger for energy and recovered paper will bring further pressure on U.S. users of recovered fibre. In order for the U.S. to keep up with the international demand for it’s recovered paper fibre, North America’s export fibre surplus will need to expand to 18.5 million tons by 2010. As the U.S. paper industry further recovers from its recession, it will also require more recovered fibre.

The end result will be to put ever-increasing pressure on energy and fibre prices, which will cause many paper makers to try to utilise other papermaking fibres. Older, mid-sized independent U.S. papermakers and those producers that are heavily invested in recycling technologies could be faced with closures or they will need to make major changes in their businesses in order to survive. These changes usually come with worker layoffs and severe regional economic distress for the communities where these businesses are located.

The Big Get Bigger: When it comes to getting bigger, no business does it faster and with more jujamogtaught determination than Wal-Mart. This mega-retailer is causing competing food and mass merchandiser retail outlets to close or at least merge with retailers if they are to survive. As a result of Wal-Mart’s success and the growth of other retailers like club and big box stores, independent supermarkets are being bought by national food chain or they are simply going out of business.

Several major containerboards, paperboard and tissue mills have merged during the last five years. Most of these mergers within the paper industry also mean the consolidation of major paper recycling power. What do mega retail chains and paper industry consolidations have to do with recycling? The answer is that fewer, but larger retailers will leverage down the prices for finished goods. This is a fact that Wal-Mart proves everyday at the expense of U.S. jobs being lost to lower cost finished goods produced from China. Less recovered paper will also be chased by fewer, but larger U.S. paper makers-recyclers. Additionally, U.S. mills will compete for fibre with export demand. U.S. mills will be forced to pay more for waste fibre paper as China’s papermaking industry continues to expand and demand more raw materials.

Faced with increased raw material costs and lower finished goods revenues, U.S. paper mills will lose business to overseas producers that can effectively compete for raw materials and then resell their goods into the U.S. because of vastly lower labour costs and government subsidised support.

Single Stream Collections: Single Stream materials collection is a method that allows collection trucks to go from house to house and pick-up one collection bin filled with all recyclables commingled together. This means glass and plastic bottles, plastic food containers, metal cans, corrugated boxes, newspapers, advertising mail and fliers as well as home office paper all go into one 50 gallon residential bin that collection trucks pick-up using mechanical lifts.

The U.S. waste collection industry is promoting this concept to their municipal customers as the answer to reduce collection costs and boost recycling rates. Their claims of reduced costs and increased waste paper collection rates are confirmed by a recent study sponsored by the American Forest & Paper Association (AF&PA).

However, the study also concludes that multi-million dollar automated sorting systems are required to create waste paper packs. These paper grades contain higher percentages of waste residuals such as plastic, metal and glass. This same study found that single stream collections would add over 8% more cost to paper industry customers that require waste paper as a raw material to fibre their mills.

Naturally, the waste hauling industry is pushing U.S. cities to adopt this “money saving” recycling method. The hauling industry owns the collection equipment and also is on the forefront of owning and installing the new sorting systems required to make semi-marketable paper grades from single stream collections. These haulers will control collection and the marketing of a considerable percentage of U.S. recyclables.

The down side of this concept is that paper makers will assume higher costs to dispose of residuals in the paper and they will face severe equipment wear and tear primarily from the glass and grit in the waste paper. These costs will create an added burden for an already stressed paper industry.

For American towns, they will need to educate their citizens to mix all recyclables into one bin. Citizens will need to forget about the decades of “paper training” in which municipal recycling coordinators promoted source separation of recyclables into different collection bins. I foresee that once “recyclables” are all commingled; haulers will gradually rise tipping fees of this mixed material to a point that will be very close to the disposal rates for municipal solid waste. The net results are towns will lose the revenues they now earn for their recyclables and they will have no option but to accept higher disposal costs for their recyclables because once they educate the public to commingle recyclables, there is no turning back to once again get them to re-sort their materials.

China paper makers will consume over half the tonnage of waste paper that the US will export for 2004.
Introduction

IN 2000 Met Éireann embarked upon the TUCSON programme of Automatic Weather Stations (AWS's). TUCSON stands for The Unified Climatological and Synoptic Observational Network. The prototype was installed in the spring of 2002. At the time of going to print, work has begun on the 11th station.

Synoptic Observations are detailed real-time measurements of temperature, dew-point, air pressure, wind speed and direction for immediate analysis towards forecasting weather situations. Climatological observations on the other hand are measurements of temperature and rainfall, mainly, for later analysis to describe weather patterns over a longer period. For the moment Met Éireann will use TUCSON for climatological work.

Met Éireann currently has its own network of 16 synoptic stations and approximately 80 climate stations. In the synoptic network there are different stages of automation. All of the climate stations are manual where readings are taken once a day. However, in today’s world of technology there are greater demands for data. The TUCSON programme has many advantages for Met Éireann. It has been developed in-house. This gives us greater control and the ability to make changes quickly. Sensors are readily available as opposed to custom-made.

The station measures:
- Temperature
- Air
- Grass
- Soil – 5cm,10cm,20cm
- Earth – 30cm,50cm,100cm
- Rainfall
- 0.1mm & 0.2mm gauges
- Solar radiation
- Wind speed & direction
- Atmospheric Pressure
- Relative Humidity

All sensors are connected to a Campbell Scientific logger. They are sampled regularly. The data is stored in the logger and collected every hour automatically via the telephone line. The system is so designed that a minimum of processing is carried out at the site. Therefore it is raw data that is collected. This gives us greater flexibility to process the data in different ways.

TUCSON Automatic Weather Station on Sherkin Island

There has been a climate station at the Marine Research station on Sherkin Island since 1972. Given its location and the amount of the south coast not covered, it is an ideal location for an AWS. Plans were drawn up in 2003 for the installation, 70 metres from the climate station. The choosing of the site and the planning application process was organised and handled by Joe Lyons from our Climatological Division. Following a protracted planning application process the project was given the go ahead.

As we awaited planning, thoughts and ideas of how this project would be carried out started towards the end of 2003. As Project Manager this was the most challenging project ever taken on. The site, being on an island and an 8-hour drive from Dublin meant that very detailed planning had to be put in place to ensure the smooth and effective execution of the project. This installation was different in that the station was being installed on private property – all installations heretofore were on state property. We do all the work ourselves except the installation of the masts. We also hire a plant contractor. The mast is normally installed in two parts, the pouring of the concrete plinth followed by the assembly and fitting of the mast a week later.

Before this project was handed over to us in the Instruments Division, Joe and I visited the site. Following that I again visited to plan an outline of the site and then list up items for the job. On this second visit I was informed that a plant contractor was on the island and advised that as he was there it would be best to start immediately. This bought the project forward by a week or two. Dermot O’Donovan
was hired and advised what was required. This was new for him too.

In the case of Sherkin Island and the distant involved we decided to do the concrete work ourselves. Then the fun began.

Now we had to organise the concrete locally; then organise the ro-ro ferry to take the concrete across to the island. As the lorry couldn’t take the concrete right up to the site, more local organisation was required there. Add to that the nervousness of the concrete company and you get the picture. Suffice to say that, that module of the project ran off smoothly.

Once the concrete was in and the initial work carried out by Dermot, work began on installing the station. The pressure of the job had eased somewhat now! But there were still challenges. As the site is rocky we had great fun driving stakes for the assembly of the turf walls. And then of course there was the weather, driving rain and high winds followed by spells of fresh winds and cold dry air. But Sherkin Island is beautiful when dry and the air is clear. In order not to loose too much time travelling Joe Carey and I stayed on Sherkin Island over the weekend of 17th and 18th of April. But our best plans came unstuck when it lashed rain all day Saturday. Howard Whelan returned to us on the following Monday bringing with him the items that we required. One was reminded of a relative coming home from abroad as Joe and I went to the Island pier to meet him. The mast arrived on Thursday and was assembled and fitted. The two men that fitted it were so overwhelmed with the scenery, that they spent more time observing than it took to fit the mast. They had time to spend as they had to wait for the ferry. By the end of week 17 the station was effectively finished. The following week the system was tested and was commissioned on the 28th of April. Dermot returned to us with his digger to complete the turf walls of the rain gauges, tidy up the site and punch holes for the installation of posts for the fence around it.

Since then the station has been giving quality data. It has become an extremely valuable tool in sea-area forecasting for the south coast. As the record builds up, the value of the data can only increase. As the whole project develops further within Met Éireann, Sherkin Island will be very important within that development.

In conclusion, I would like to acknowledge the help given to us by the Murphy family. To Michael for the help in organisation of items at the beginning of the project; to Susan for our well-being; to Robbie for the photographic record and to Matt for his “minding” of Howard.

The personnel who worked on the project were Frank Clabby, Joe Carey and Howard Whelan.

Synoptic sites in Met Éireann: Malin Head, Belmullet, Knock Airport, Claremorris, Clones, Finner, Cork Airport, Mullingar, Birc, Kilkenny, Dublin Airport, Casement Aerodrome, Shannon Airport, Valentia, Rossilare and Roches Point.

TUCSON Sites: Mullingar, Phoenix Park, Mace Head, Teagasc sites at Johnstown Castle, Oakpark, Moorepark & Ballyhaise, Roches Point, Mount Dillon (Co Roscommon), Sherkin Island & Newport, Co Mayo (currently being installed).

Frank Clabby is Senior Meteorological Officer, Instrumentation & Environmental Monitoring Division, Met Éireann, Glasnevin Hill, Dublin 9, Ireland. www.met.ie

Sherkin Island

The Stevenson Screen. Note the tubes for the earth PRT’s in the foreground.

The anemometer sensors at the top of the mast. The crossarm is fitted due N-S with the direction vane on the northern end.

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The anemometer sensors at the top of the mast. The crossarm is fitted due N-S with the direction vane on the northern end.
Rainwater Harvesting

SHERKIN COMMENT is pleased to report on a new project being undertaken on Rainwater Harvesting.

Recent economic growth in Ireland has significantly increased the demand for water supplies and has led to pressure on water resources. The traditional approach to meeting increased demand in the water sector has been to develop new sources/supplies to augment existing supply. This approach has economic implications with regard to infrastructure and associated environmental costs. Alternative options have been identified using efficiency and conservation measures as solutions to water capacity problems. Several European studies have shown that the link between water use and economic growth can be broken, by utilising efficiency and water conservation measures, and substituting rainwater for treated potable water, where suitable.

The pace of economic development will increase the demand on water supply infrastructure over the next 10 years. The per capita consumption of water, for domestic use by an individual, on a daily basis is estimated to comprise 60% of the total demand for water in Ireland. The most recent and most comprehensive study of water in Ireland, The National Water Study, estimated that the average per capita water consumption (PCC) for Ireland in 1997 varied between 130 litres per head per day) to 139 l/h/d. Projections for the year 2018 indicate a PCC of between 146 and 158 l/h/d. Figure 1 illustrates a typical rainwater harvesting facility for agricultural use.

Rainwater harvesting has a significant potential for irrigation, general washings and farm use. Where the water used is subject to water charges, water costs can be a significant part of the annual running costs of farm management. Rainwater harvesting has a significant potential to provide an alternative supply at relatively low capital and running costs. Figure 2 illustrates a typical rainwater harvesting facility for agricultural use.

In periods of low rainfall sensors in the header tank will trigger the mains header tank to supply the rainwater system. This will require a separate connection from the mains supply to the rainwater system. This mains supply will continue to supply the rainwater system until the levels in the rainwater storage tank rise and this triggers a sensor to switch off the mains supply and return to using the harvested rainfall. The proposed system is fully automatic so the pump only runs when water is called for and the system switches back to mains water when there is insufficient rainfall. Water supply to other parts of the building remains unaffected by the alterations proposed.

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An average Irish farm building with roof dimensions 14.4m x 13m at a pitch of 22o and an average annual rainfall of 900mm, has a potential rainwater yield of 113,603 litres per year. This could be used for irrigation, farm washings, and could be treated to provide potable water for livestock. Rainwater harvesting in the farmyard has the significant additional benefit that it can reduce the amount of rainwater which is needlessly soiled on contact with the farmyard and work areas. Farmers who harvest rainwater will consequently have a reduced need for storage and landspreading of soiled water.

Pilot Project

A pilot project on rainwater harvesting is being progressed by the National Rural Water Monitoring Committee (NRWMC) in partnership with the National Federation of Group Water Schemes (NFGWS). The Dublin Institute of Technology (Engineering Section) has undertaken research into rainwater harvesting in recent times and is providing technical assistance on the project.

Some 245 water treatment/disinfection plants are being installed on group schemes around the country. It is important that both capital cost and, more importantly, operating/maintenance costs are minimised in order to ensure the financial sustainability of projects. Reducing water demand will mean smaller, more cost-efficient plants can be provided. Farmers are worried about annual water charges following the commissioning of the new treatment plants. New advances in rainwater harvesting systems for both farmyards and private houses make rainwater collection and re-use simple and attractive.

In order to evaluate further the usefulness of the system, the NRWMC is advancing the pilot project with both an agricultural and domestic element.

(i) Farm application

Teagasc recommended a suitable farm location at Grange in Co. Meath. Filtered rainwater collected from farm buildings will be collected and stored in PVC tanks, fitted with a small submersible pump, and delivered to outside taps and building rainwater tanks.

The average tank rise and this triggers a sensor to switch off the mains supply and return to using the harvested rainfall. The proposed system is fully automatic so the pump only runs when water is called for and the system switches back to mains water when there is insufficient rainfall. Water supply to other parts of the building remains unaffected by the alterations proposed.

(ii) Domestic application

Curlow County Council are advancing a large bundled DBO project for over 40 rural water supply schemes in the South & East of the country. (DBO means a system where a local authority engages a contractor to Design Build and Operate a facility. This is in contrast to past practice where contractors are engaged to design and/or to build a facility for a local authority and the authority then operates the plant. In the case of DBO the role of the local authority is simply to pay the contractor for designing, building and operating the facility.)

All participating schemes are asked to put water demand management and water conservation measures in place in order to ensure the financial sustainability of the project. The council is assisting by providing a suitable site for testing domestic rainwater collection and re-use systems. Underground PVC tanks, with a special filter attached to the downpipe, will be provided at about 6 houses in a small estate outside Carlow town. Water will be delivered via a small submersible pump to a second header tank in the attic. This attic tank will feed directly to toilet cisterns and outside taps. This “second” header tank will be connected to the standard attic tank through a non return valve which will automatically open in the event of the rainwater tank running dry during dry spells etc.

It is hoped that at the end of the 12-month period that these projects will be economically successful and will become the norm, especially in many housing estates. It is also hoped that farmers will see the advantages of harvesting rainwater.

Matt Murphy, Editor, Sherkin Comment, Sherkin Island, Co. Cork.
Dead Zones
By Michael Ludwig

I DON’T know who named the seasonally occurring, oxygen depleted, water mass off the mouth of the Mississippi River, or the “Dead Zone” but the name has stuck. Yes, those levels are unacceptable, especially for species that need at least moderate levels of oxygen, but the water masses are not often the “cloud of death” that the name implies. And, fortunately, the condition does not have to be permanent. Depletion of oxygen zones are naturally occurring but often, pollution aggravated seasonal events. These are most common when water circulation is limited and water temperature is elevated. Oxygen occurs in saline waters at levels ranging from 0.0 to over 14.0 milligrams per litre (mg/l). Temperature and consumption influence oxygen levels in water. As both increase oxygen levels decline and can become a problem when the impact area, duration or degree of the depletion event approaches or exceeds organism’s survival limitations. While a water mass can have areas in which oxygen is absent (anoxia and a “true” dead zone), much of the zone has some oxygen but at levels below 3.0 mg/l (termed hypoxia). Many Finfish and shrimp species fall into the group needing more than 3.0 mg/l but other species (e.g shellfish and worms) are capable of surviving “hypoxic” levels. For organisms to survive a Dead Zone event the questions are “which way is the snail, but the water masses are managed or can I hold my breath until this passes?” A fish has a better chance than a snail, but the snail needs less oxygen than the fish so it can still crawl long after the fish has suffocated.

Naturally occurring oxygen depletion events were first recorded in colonial times. Lake Pontchartrain just outside New Orleans, is a textbook example. During the late winter when conditions are right, the Lake becomes so hypoxic many species seek oxygen by crawling, flopping or squirming onto the beaches. Local citizens used to celebrate these free food or “Jubilee” events. Oxygen depletion events occur, routinely, in Chesapeake Bay and western Long Island Sound. A severe event occurred in the

Atlantic Ocean off New York and New Jersey in the summer of 1976. The Gulf of Mexico “Dead Zone” footprint averaged about 5,000 square miles but exceeded 5,800 square miles in the summer of 2008. Today, we know that hypoxia and anoxia conditions are natural but can be aggravated by human activity. They are caused by too much fertilizer, especially nitrogen, being added to the water. Too much nitrogen (eutrophication) allows too much phytoplankton growth. Some of the plants sink below the depth where photosynthesis can occur and the plants start using oxygen rather than releasing it. When the mass of plankton begin to die, the bacteria that decompose things increase in numbers. They further deplete oxygen. This chain of events and the size of each link are the controlling components of a hypoxic or anoxic event.

Regrettably, we are identifying more and more Dead Zones but more disturbingly, undertaking few, effective corrective actions. Even though a simple enforcement of existing anti-pollution laws would correct the situation, we seem unable, generally, to take action. The lack of a response perpetuates the proliferation and expansion of these zones. We are finding that the source of the pollution influences our ability to address the problem. Chesapeake Bay is a perfect example. Over the last three decades the US has spent more than one hundred million dollars investigating the degraded water quality in the Chesapeake system. To date, the problems continue to worsen. How can that be? Simple, the sources of the nitrogen eutrophication have not been brought under control. The three leading sources of the 300 million pounds of nitrogen pollution annually entering Chesapeake Bay are agriculture, sewage treatment plants, and air pollution. For thirty years, a voluntary approach to reducing nitrogen inputs has been used. It isn’t working. The same situation exists in the Mississippi River basin. But, in Long Island Sound, in less than fifteen years, the nitrogen pollution situation has been reversed. The most obvious difference in the situations is the source of the pollution. In Chesapeake Bay and the Mississippi River watershed, one source is farms. In Long Island Sound, the largest nitrogen source is government owned sewage treatment plants. Although the path to nitrogen reduction in the Sound has been paved with tax dollars and a couple of lawsuits, Connecticut and New York control plant operations with direct oversight and intervention. That allows the States to set and meet pollution reduction standards. In Chesapeake Bay and the far larger Mississippis watersheds the government’s ability to invoke accountability is handicapped by economics and dispersed responsibility. If the problems in Chesapeake Bay start on a farm in Pennsylvania and the Gulf of Mexico is being polluted by activities in Kansas and Iowa, change will only come when it is more “expensive” to pollute than not.

Dead Zones are not wholly American. Worldwide, researchers have found 146 dead zones. Since the 1960s, the number of identified Dead Zones has doubled each decade. That rate of identification reflects both improved sampling and escalating pollution. Many zones are seasonal, but some of the low-oxygen areas persist year-round. However, without the “will” to reverse the trend, coastal waters that can be degraded seem doomed to that fate.

Michael Ludwig, NOAA Fisheries, Milford, CT 06460, USA.
Public Action for Sustainability

TRADITIONAL production methods and patterns of consumption, particularly in the industrialised countries, are the major cause of the continued deterioration of the global environment. Meanwhile the poorer segments of humanity are unable to meet food, health-care, shelter and educational needs. It is essential to have sustainable production and consumption patterns to redress this imbalance.

The general principles in the "What can I do?" section can be applied to most situations as a means towards achieving sustainability. Other information leaflets in this series contain more specific choices which you can make. They are only a small representative sample of a long list of choices which could be made – it would be impossible to give a comprehensive list. However, it is useful to understand the implications of what you do, that it is possible to make changes as an individual or in partnership with others and that there is information available to assist you in making those choices.

Environmental Partnership Fund

The Department of the Environment and Local Government operates an Environmental Partner-
The eastern end of Lindisfarne is dominated by the castle, which stands on a outcrop of the Great Whin Sill. The sand dunes of Lindisfarne, like dunes anywhere else, have been piled up by wind and tide, and are now held in place by marram grass. In the sheltered low ground behind the dunes, grasslands have established themselves along with a rich variety of flowers. Forget-me-nots, bird’s-foot trefoil, silverweed, ragwort and viper’s bugloss.

In late summer, Hebridean sheep are brought in to graze on the tough grasses. This allows flowers like Grass of Parnassus and orchids such as twayblade and marsh helleborine to thrive.

A less welcome plant, which blights the summer dunes, is the piri-piri bur. This New Zealand native probably arrived as seeds clunging to sheep’s fleeces and now sticks to any clothing or animal that it contacts.

The flowers of the grasslands provide food for many insects. Burnet, cinnabar and tiger moths are plentiful, as are butterflies such as grayling, totoeshell, painted lady and dark green fritillary. While walking through the dunes, a visitor needs great care to avoid trampling on brown-lipped snails.

Two small pools of freshwater are found on the island. The western pond, on a stretch of land known as The Snook, is somewhat bleak and windswept. In shores are home to the rare black bug rush. The Lough, near the east coast, is hasher in its vegetation, which includes reeds, reedmace, yellow flag iris and bogbean. It was probably dug by the monks as a source of fresh water and fish. Now it attracts waterfowl such as mallard, coot, moorhen, shoveller and little grebe, as well as nesting black-headed gulls.

The invertebrates of the tidal marshes and mud flats are food for waders and wildfowl. In winter, the numbers of feeding birds, knot, turnstone and oystercatcher, are swollen by visiting greylags, wigeon, grey plover, redshank and bar-tailed godwit. Lindisfarne is the only regular wintering site in Britain for pale-bellied Brent geese from the Svalbard archipelago. Winter also brings whooper swans and diving ducks to the lough.

Aidan’s death, in 651, coincided with the vocation of a young shepherd, Cuthbert, who later became prior and finally Bishop of Lindisfarne. Cuthbert died in 687 on the nearby Farne Islands and was buried on Holy Island. Nearly two centuries later, following a series of Viking raids, the monks carted St Cuthbert’s body through northern England and southern Scotland for seven years, until they reached Chester-le-Street in 883. In 995, the saint was again disinterred and his body taken to the present site of Durham Cathedral, where it found its final resting place.

The rocks of the Whin Sill, which provide a platform for the castle, themselves stand on a layer of limestone, which extends northward over the rest of Lindisfarne. This limestone was once quarried to make lime for curing the acidity of the fields of Northumberland. The quarried faces are still exposed near the northern coast. Fossil crinoids found here, or broken off and scattered around the shore, are often referred to as St Cuthbert’s rosary beads. Delicate ferns like wall rue and maidenhair spleenwort grow out of apparently barren cracks in the limestone.

The seas around Lindisfarne are very shallow, and at low tide, the mud flats extend to the mainland. A causeway allows the passage of cars, while to the south of this, a line of tall wooden posts across the sands marks the Pilgrim’s Way, which can be followed by walkers who do not mind getting their feet wet. The daily tide tables are posted at both ends of the causeway, though motorists are often stranded and have to sit out the hours of high tide in the midway shelter box.

The Northumbrian coast is only a mile away, yet when the tide comes in and Lindisfarne once more becomes Holy Island, the feeling of isolation grows strong. Amid the peace and beauty, it is then possible to sense something of what brought the early monks to this wild outpost of Celtic Christianity.
Hard Rock in West Cork

By Daphne Pochin Mould

PEBBLE pups, rock hounds, geologists, we are the people who pick up the story of planet Earth where archaeologists and historians leave off. Dog-like, nose to the ground we track the world’s story back and back, millions on millions of years to the new born planet about which the astronomers then take over. “Rock solid” may be a common phrase but rocks are more mobile than you might think. These days we are familiar with the idea of continental drift, of the land masses moving, of Africa once joined to South America, of communities of animals and plants once one, now separated by the ocean.

Geology is able to trace changing patterns of land and sea, of mountain ranges heaved up, and then worn down again, of ocean and ancient shore, of deserts and forests and ice sheets. Geology can find fossil remains that tell the story of the past. Geology is able to trace the world being made or changed.

The new geological map of West Cork, published last autumn by University College Cork (UCC), is therefore very welcome. It is the work of Dr. George Bernard Shaw wrote so long ago. “All professions are conspiracies against the lazy.” True, they all have their secret languages: you do need technical terms for things and events but they need not be imbedded in polysyllabic waffle. So fewer and fewer young people are choosing science, and there are high failure rates in mathematics, that most limpid form of logic, devoid of all the “ifs” and “buts” and “what ifs?” speculations and theories of history or literature. Today efforts are being made to get scientists to write in clear English and winner of a competition so to do, is Laoise Moore, whose “Human language, how the male Y chromosome is vital in the study of human evolution, going back and back far into antiquity.” So far as West Cork is concerned, the story starts some four hundred million years ago in the Devonian (Old Red Sandstone) period and ends nearly some two hundred and ninety million years ago.

What is now Ireland was then part of a large land mass, mountains to the north of West Cork, and it was dry and bare and hot and now and again, it rained heavily and sand and gravel were washed down and temporary lakes formed. There were ripple prints, just as you can see them on beaches today, and if the sun baked them hard, the next wash of sand and gravel were washed down, and if the sun baked them hard, the next wash of sand and gravel were washed down, and if the sun baked them hard, the next wash of sand and gravel were washed down, and if the sun baked them hard, the next wash of sand and gravel were washed down, and if the sun baked them hard, the next wash of sand and gravel were washed down. So far as West Cork is concerned, the story starts some four hundred million years ago in the Devonian (Old Red Sandstone) period and ends nearly some two hundred and ninety million years ago.

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**The Water Framework Directive**

**IRELAND ON SCHEDULE**

By Matt Murphy

I AM sometimes accused of being unduly critical of public authorities for dragging their heels when it comes to environmental protection. Ireland does not always win top prize for prompt implementation of EU legislation on the environment. I am drawing some encouragement from the recent publication by local authorities – on time – of the very comprehensive and informative Characterisation and Analysis Reports in relation to our newly-created River Basin Districts (RBDs). Their publication means that Ireland has met all the deadlines set by the Water Framework Directive for 2003 and 2004. A summary of the characterisation reports was published on the website http://www.wfdireland.ie on 22 December 2004. I recommend taking a look. The reports are a new and valuable source of information for anyone who has an interest in the protection of our aquatic ecosystems.

**WFD**

The Water Framework Directive was adopted in 2000 and is a major feature of EU legislation on the environment. It will be the driving force for action by Member States to protect and improve water quality in the European Community for the foreseeable future. It has an initial timeframe of 15 years. The central environmental objectives of the Directive are to ensure (a) there is no deterioration in the status of any waters from now on, and (b) that all waters are brought up to at least “good status” by 2015 (although the criteria / standards for “good status” have not yet been defined in detail). In the case of protected areas, any higher status appropriate to that area must be achieved. The Directive specifies that water management must be undertaken on the basis of river basin districts and that all the relevant public authorities must co-ordinate their efforts. This sounds like simple common sense but it has not always been the case in practice given that, for example, the Shannon river basin includes the areas of some 18 local authorities, not to mention the involvement of numerous other public bodies such as regional fisheries boards, Government Departments, EPA, the Marine Institute, Geological Survey of Ireland, OPW, etc. In particular the Directive requires that all the public authorities must co-operate to produce by 2009 one single River Basin Management Plan for each RBD. The plan must set out in detail the environmental objectives set for the RBD (e.g. to achieve “good status”) and the full programme of measures which will be pursued by all the authorities to achieve those objectives by 2015. The plan must be reviewed and updated in 2015 and every six years afterwards.

Several important steps have already been taken towards implementing the WFD and establishing this planning and management process. The Directive was transposed into national law in 2003 by the European Commu-
Call for ban on fishing in 30% of UK waters

The UK’s Royal Commission on Environmental Pollution has called for commercial fishing to be banned in 30% of UK waters. Nobody could dismiss the RCEP as a fringe group or accuse it of not doing its homework. It wants a reversal of the “pre- sumption in favour of fishing” it says dictates policy now, and which says that reserves to protect the North and Irish Seas would cost £9-15m annually, compared with about £33m a year for the national parks of England and Wales. The Commission’s chairman, Sir Tom Blundell, says failure to act will mean many fish populations “will just collapse”.

Extinction of Bird Species

Since 1500, 1.3% of bird species are believed to have slid over the edge to oblivion. But researchers at Stanford University in California say they expect 10% of those that remain will have become extinct by the end of this century – on a conservative estimate. There are clear risks to humans if birds vanish: in 1997, 30,000 of the world’s 39,000-50,000 rabies deaths occurred in India, where vultures are in calamitous decline. The Stanford team says we should expect declines in other services birds provide, like pollination and seed dispersal. By 2100, they say, as many as 14% of species could have vanished, with 25% “functionally extinct” – critically endangered or extinct in the wild.

Call to plant trees at Easter

In the last half-century Kenya has lost about 90% of its forests. The first African woman to be awarded the Nobel Peace Prize is Kenya’s deputy environment minister, Professor Wangari Maathai, founder of the Green Belt Movement, which has planted 20-30 million trees in Africa to counter forest loss and slow the spread of the deserts. In her acceptance speech Professor Maathai said the world was faced with a challenge “that calls for a shift in our thinking, so that humanity stops threatening its life-support system”. She called for a worldwide campaign to plant trees at Easter, as a symbol of renewal and to protect the planet.

Grim news for Pygmy Chimpanzee

There’s grim news too for the pygmy chimpanzee, or bonobo, thought to be our closest relative. Researchers think it may have been hunted so much that its survival is at risk. The bonobo is found only in the heart of Africa’s Congo Basin and is much less widespread than the chimpanzee. Estimates of its abundance had suggested there could be 50,000 of the apes. But WWF, the global environment campaign, says preliminary data from a survey in the Democratic Republic of Congo “shows evidence of very few bonobos living there. No bonobos were encountered, and sightings of nests and dung were only made in a quarter of the area surveyed, at lower densities than previously measured. In contrast, there was abundant evidence of human encroachment into the park and of poaching.”

China increases coal imports to boost economy

If you think coal is the fuel of the past, think again. China, the world’s largest coal producer, is cutting exports and increasing the amount it imports in order to keep its economy booming. International prices have risen by 50% in 2004 as a result. China relies on coal for up to 70% of its energy. The news will not cheer negotiators working to ensure the Kyoto Protocol, the global climate change treaty, requires developed countries to cut their emissions of greenhouse gases in its next phase. The human cost is appalling: 12 miners died every day in the first nine months of 2004, according to official accident figures.

EU propose minimum fines for vessels polluting European waters

European Union member states are supporting stronger measures against vessels which pollute European waters, in an attempt to prevent a repeat of the 2002 break-up of the tanker Prestige off the coast of Spain. Their proposal, which still awaits formal approval, would allow minimum fines in less serious pollution cases of between 150,000 and 300,000 euros. Worse cases would attract fines ranging from 750,000 euros to double that. Member states would be able to set higher levels if they wanted. But Malta, Greece and Cyprus are reported to have blocked a plan to set minimum penalties for ships’ masters responsible for pollution.

Coral reefs in trouble

The Australian Institute of Marine Science says 20% of the world’s coral reefs have been destroyed or look unlikely to recover soon. 24% face imminent risk of collapse from human pressures and another 26% are at risk in the longer term. Bleaching and death linked to climate change is the main threat, it says. But about 40% of Pacific and Indian Ocean reefs badly bleached in 1998 are recovering, AIMS reports. Another team of Australian scientists says warmer water will do coral more good than harm, though one expert disagrees.

Offshore wind energy

The UK has become the world’s second-largest generator of energy from offshore wind, after Denmark. The 30 turbines which are now producing power at Scroby Sands, off the Norfolk coast, add up to almost a quarter of the wind capacity built in the UK in 2004. The next 12 months should see an even larger increase in wind’s contribution. By December 2005 the country could have 300MW of offshore wind power, about 40% of the global total.

Tackling global warming

Tackling global warming need not be prohibitively expensive, according to Professor John Schellnhuber of the University of East Anglia, UK. He says the cost of averting runaway climate change could be as little as 0.3% of global GDP. “There’s no magic bullet for climate change”, he says. “But if we have a portfolio strategy, we can solve it.” That means reducing emissions (he lists 19 possible ways to cut carbon dioxide), and less obvious steps as well, like reducing our vulnerability to the effects of a warmer world – and building nuclear power stations.

Orchards qualify for EU subsidies

There’s good news for British orchards. They are a traditional part of the landscape, and provide a home to many species, including bats, declining tree sparrows and spotted flycatchers, and the rare noble chafer beetle. Some British farmers, thinking their orchards might not qualify for subsidies under the EU’s revised Common Agricultural Policy, destroyed their trees so they would still get paid. But English Nature, the government’s adviser, says they will qualify after all, and may also get environmental stewardship payments.

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Alex Kirby is a former BBC environment correspondent now writing and broadcasting on environment and development.
Cuskinny Marsh Nature Reserve

By Jim Wilson

CUSKINNY Marsh Nature Reserve is tucked away on the south side of the Great Island, in Cork Harbour, 2 km east of the town of Cobh. The reserve was established in 1990 when the landowners, the Ronan and Bird families, agreed to allow Birdwatch Ireland to promote the area as a nature reserve. The reserve is probably best known to most people for the Mooneey Goes Wild Down Chorus broadcasts in recent years. It occupies 26 acres and is roughly triangular in shape. Secondary roads form the western and southern boundaries and the eastern boundary adjoins farmland. The reserve land is private property with no public access. Because it is so small good views of the woodland and lake are possible from the roadway.

Treecreepers and Kingfishers in the winter, Orange tip butterflies and Lady’s Smock in the spring and a fine dawn chorus in the summer are just some of the things that make Cuskinny worth a visit at any time of year. At the northern end is woodland comprised mainly of Alders and willows. The Great Island’s only fresh-water stream runs through the reserve. Despite a number of pollution incidences and illegal dumping in the past the stream now holds a healthy population of sticklebacks and other freshwater flora and fauna. At the southern end of the reserve are a reed bed, a beackish lake and a rough wet meadow area. In the winter Water Rails can be heard squealing in the reed bed while in the summer Sedge Warblers and Reed Buntings can be seen and heard. The lake itself is home to a resident pair of Mute Swans, which are fed by the large number of regular visitors to the reserve. Grey Herons can be seen at any time of the year, standing motionless at the lake edge or in the bay waiting for an unsuspecting fish to come within striking distance. In winter large numbers of gulls fly to the lake from all over the harbour to wash and preen and because of this the lake is visited by birdwatchers from all over the country hoping to find rare gulls that turn up with great regularity. American Ring-billed Gulls are seen almost every winter, and rarer gulls such as the American Herring Gull and Sabine’s Gull have also been seen here. Sparrowhawks and Peregrine falcons are regularly seen and the sound of Ravens that nest near by is never far away. If you are lucky you might catch a glimpse of a Kingfisher, especially in autumn and winter, on the edge of the lake or in the channel next to the rough meadow. Beyond the causeway is Cuskinny Bay and magnificent views of the mouth of Cork Harbour. The bay is usually a good spot to see Oystercatchers in winter, when as many as 200 will arrive from surrounding fields to wash in the stream that enters the bay. On the bay itself in late spring the magnificent Great Crested Grebe in its breeding plumage can be seen and flocks of Whimbrel, newly arrived from Africa stop briefly on their journey to Iceland to breed. Grey and Common Seals have been seen in the bay, especially after a storm. The Killer Whales that visited Cork Harbour a few years ago could be regularly seen from the bay. Keep an eye out they might turn up again!

Through the hard work of a small group of volunteers the reserve has grown in profile and value over the years. Despite the absence of visitor facilities thousands of people visit the reserve each year. Children from the local boys’ national school, Scoil local naofa, led by Willie Mac-Sweeney have been studying the small songbirds on the reserve by using nest boxes, which they made and erected on the reserve. The sad thing about Cuskinny is that it is the only educational nature reserve in Cork Harbour. The reserve is a very popular place for people to come and relax and get away from the madness of modern living. Its value to the people of Cork cannot be measured. There appear to be no commitment by successive governments to real green space planning on the scale seen in Ireland in the 19th century. Despite the very hard work of a few dedicated individuals it is very possible that a day will come in the not too distant future when the reserve will be completely surrounded by houses and this little jewel in the heart of Cork Harbour will be lost. The government and local authorities need to begin to realise that areas such as Cuskinny Marsh are an important part of modern society and need to be bought and protected for future generations. Places like this provide a social service for the people of the Harbour area with little or no running cost. Cuskinny Marsh Nature Reserve continues to fly the flag for our natural heritage in the heart of Cork Harbour.

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The Carrigaline Court Hotel & Leisure Centre
Carrigaline, Co. Cork
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Cuskinny Marsh Nature Reserve has grown in profile and value over the years, through the hard work of a small group of volunteers. Cuskinny Marsh Nature Reserve is located on Great Island, Cork Harbour - 2 km from the town of Cobh.

Cuskinny Marsh Nature Reserve has been recording the number of habitats that can be seen almost every winter, and rarer gulls such as the American Herring Gull and Sabine’s Gull have also been seen here. Sparrowhawks and Peregrine falcons are regularly seen and the sound of Ravens that nest near by is never far away. If you are lucky you might catch a glimpse of a Kingfisher, especially in autumn and winter, on the edge of the lake or in the channel next to the rough meadow. Beyond the causeway is Cuskinny Bay and magnificent views of the mouth of Cork Harbour. The bay is usually a good spot to see Oystercatchers in winter, when as many as 200 will arrive from surrounding fields to wash in the stream that enters the bay. On the bay itself in late spring the magnificent Great Crested Grebe in its breeding plumage can be seen and flocks of Whimbrel, newly arrived from Africa stop briefly on their journey to Iceland to breed. Grey and Common Seals have been seen in the bay, especially after a storm. The Killer Whales that visited Cork Harbour a few years ago could be regularly seen from the bay. Keep an eye out they might turn up again!

Through the hard work of a small group of volunteers the reserve has grown in profile and value over the years. Despite the absence of visitor facilities thousands of people visit the reserve each year. Children from the local boys’ national school, Scoil local naofa, led by Willie Mac-Sweeney have been studying the small songbirds on the reserve by using nest boxes, which they made and erected on the reserve. The sad thing about Cuskinny is that it is the only educational nature reserve in Cork Harbour. The reserve is a very popular place for people to come and relax and get away from the madness of modern living. Its value to the people of Cork cannot be measured. There
Shield Bugs mainly feed on plant sap, though a few are carnivorous.

Lichen is an unusual plant in that it is made up of tiny algae and a fungus living together.

The damselfly adult looks much like the dragonfly but can be distinguished by the way it holds its wings when at rest. The dragonfly holds its wings out to the sides, whereas the damselfly holds its wings together above its body.

Lady’s Smock or Cuckoo flower is found in damp grassland. Here it has an Orange Tip butterfly resting on its petals.

On the Nature Reserve, Grey Herons (with Mute Swan in the background) can be seen at any time of the year, standing motionless at the lake edge or in the bay waiting for an unsuspecting fish to come within striking distance.

Sea snails have a hard outer shell to protect their soft insides.

Common seals live mainly along shorelines and in estuaries. They are sometimes seen resting on sandbanks, beaches, reefs and protected tidal rocks.

Catkins of the sallow tree, which appear in advance of the leaves in March and April.
Views of the EPA Director General

Matt Murphy, Editor of Sherkin Comment, puts a series of questions to Dr Mary Kelly, Director General, Environmental Protection Agency:

**Matt Murphy (MM): What is the role of the EPA?**

**Mary Kelly (MK):** The Environmental Protection Agency (EPA) is an independent public body established in July 1993 under the Environmental Protection Agency Act, 1992. The EPA is managed by a full-time executive Board comprising of a Director General and four Directors. The Agency is assisted by an Advisory Committee of twelve members, appointed by the Minister for the Environment, Heritage and Local Government. EPA has a wide range of statutory duties and powers under various Acts of the Oireachtas. The main responsibilities of the EPA include the following:

- Licensing large complex industrial and other processes with significant pollution potential;
- Monitoring environmental quality, including the establishment of databases to which the public have access;
- Publishing periodic reports on the state of the environment;
- Promoting environmentally sound practices;
- Promoting and co-ordinating environmental research;
- Licensing all significant waste disposal and recovery activities;
- Implementing a system of permitting for the control of VOC emissions resulting from the storage of significant quantities of petrol at terminals;
- Implementing and enforcing the GMO regulations for the contained and deliberate release of GMOs into the environment;
- Preparing and implementing a national hydrometric programme.

**MM: Does the EPA feel it is completely independent?**

**MK:** The Environmental Protection Agency is independent in its decision making function. Section 40 of the Environmental Protection Agency Act stipulates that it is illegal for others to attempt to influence the communication for the purpose of influencing improperly...consideration of any matter which falls to be considered or decided by the EPA, committee or consultative group. Furthermore if a member of the EPA is so contacted it is their duty not to entertain the communication further and they must report this communication, in writing, to the EPA. Thus the EPA Act secures independence for the EPA by making it illegal to attempt to influence agency actions. The EPA guards this independence jealously and takes decisions based on sound science and recommendations from qualified and expert staff.

**MM: What is the EPA’s policy on incineration?**

**MK:** Incineration with energy recovery has been designated as having an important role to play in the physical planning process; that is the job of landfill. When it comes to making decisions on emphasis on waste prevention and minimisation, an approach is firmly grounded on the international viewpoint—these are deemed to be of low risk.

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**MM: Does the issuing of licences make a difference?**

**MK:** The EPA has issued over 600 Integrated Pollution Control (IPC) licences and more than 160 waste licences to date. We have also licensed in excess of 160 GMO users and issued Volatile Organic Compounds (VOC) permits to all appropriate facilities.

**MM: What is the EPA’s policy on landfill?**

**MK:** As with incineration, landfill will remain an integral part of an integrated waste management policy – albeit occupying the lowest position in the waste hierarchy. The role of the EPA is to decide, on the basis of licence applications, whether individual landfill sites can be licensed to operate to stringent conditions, and to enforce those conditions on the operators. Since the EPA started to licence landfills in the late nineties, the number of active landfill sites has been reduced considerably, and the standard of operation and management has improved out of all recognition. The EPA is precluded from issuing a licence for a landfill or other waste activity unless it is satisfied that it will not cause environmental pollution. The EPA is satisfied, that modern landfills, operated according to conditions set down by the EPA’s mandate it must ensure that all standards of best available techniques. The EPA attaches conditions to licences it grants to ensure that facilities are properly managed and that risk of pollution is minimised. A licence to incinerate waste, if granted, would be conditional on appropriate abatement and monitoring of all relevant parameters so as to demonstrate and ensure the safe ongoing operation of the incinerator consistent with environmental protection. The EPA has licenced 9 large industrial incinerators on 7 sites in Ireland since the mid nineties; these incinerators continue to operate in a satisfactory manner.

**MM: To what extent are dioxins a problem?**

**MK:** The EPA conducts national dioxin surveys, the latest of which is due to be published in January 2005. These surveys have found that Ireland has extremely low levels of dioxins, even in the areas close to industrial incinerators. Furthermore, the EPA has published an inventory of levels of dioxin and furan emissions to air, land and water for 2000 and 2010, which found that even if all the municipal incinerators provided for in waste management plans were built, they would account for less than 2% of dioxins emitted to air, and that dioxin levels would remain low.

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**MM: What is your reaction to this?**

**MK:** The EPA makes an explicit provision for the selection of the Director General as well as the four other Directors. A selection committee that consists of the Secretary General and Ministers of Environment and Heritage, the Chairperson of the Department of the Environment Heritage and Local Government, the Chairperson of An Taoiseach, the Managing Director of the Industrial Development Authority, the General Secretary of the ICTU and the Chief Executive of the Council for the Status of Women, makes a recommendation to the Government following an open competition and interview procedure, and the Government makes the appointments based on these recommendations. Current Government policy in public administration is to encourage mobility between the public and private sectors in order to facilitate cross fertilisation of ideas particularly in the area of strategic management. I have always acted professionally and with integrity throughout my career and continue to do so in my role as Director General of the EPA.

**MM: What is your reaction to this?**

**MK:** Yes, we have refused licences. Licence applications are refused when the operations proposed are not in line with relevant national and EU legislation and regulations. In total 9 licence applications have been refused, however, a further 41 applications were not licensed for a variety of reasons, such as the applications were withdrawn, or abandoned following meetings with EPA staff. Furthermore, in the waste area, the final licence does not always allow all of the activities applied for, and in some cases licences are issued to cover the orderly closure of sites. Licences are issued subject to operating conditions and it is through these conditions that we ensure that licensed facilities operate to the highest environmental standards. In considering a licence application the EPA considers matters relating to the safety operation of the facility, bearing in mind the impact on the environment and human health. All the licences we issue can be viewed by the public, either at our offices or through our website www.epa.ie.

**MM: Is there sufficient staff to carry out the EPA’s new role under the Office of Environmental Enforcement?**

**MK:** The Office of Environmental Enforcement was set up within the EPA in October 2003 to bring a new focus to enforcement of environmental legislation. The EPA was also given newowers of enforcement at the same time, which strengthened our hand considerably in the effort to achieve compliance with the law. The establishment of the Office of Environmental Enforcement came about following a strategic review of the EPA, which resulted in considerable restructuring within the organisation. This gave us the opportunity to dedicate a considerable number of our staff solely to the enforcement effort, enforcement of EPA licences and enforcement of public authorities in their environmental responsibilities. In this restructuring we regionalised our enforcement teams and streamlined and automated many of our internal processes allowing us to achieve much more. We are satisfied that we can enforce the licences issued to date and that through our Environmental Enforcement Network, the enforcement activities of a range of agencies from An Garda Siochana to the Fishery Boards and Local Authorities can be coordinated to achieve much improved compliance enforcement of EPA licences, waste or IPC, are subject to a risk assessment approach, so that sites which have a higher risk or higher perceived risk of environmental pollution attract much more enforcement effort than those which are deemed to be of low risk.
MM: Does the EPA have enough powers regarding enforcement?

MK: The Protection of the Environment Act, 2003 considerably strengthened our enforcement powers. For example it gave us the power to direct local Authorities to carry out certain actions if the EPA deems there to be a risk of environmental pollution – a power which we have used on a number of occasions already to good effect. It also allows us to suspend or withdraw a licence under certain conditions. The OEE will make best use of the powers available to it in enforcing compliance with environmental legislation, and if we feel that these powers are not sufficient we will have no hesitation in returning to Government to seek further powers.

MM: What are the functions of the EPA’s Office of Environmental Enforcement?

MK: Under the Office of Environmental Enforcement there are additional responsibilities for:

- Improving overall compliance with environmental protection legislation in Ireland
- Raising awareness about the importance of enforcement of environment protection legislation in Ireland
- Enforcing IPPC licences and Waste licences issued by the EPA
- Auditing and reporting on the performance of local authorities in the discharge of their environmental protection functions
- Taking action against local authorities that are not discharging their environmental protection functions in an adequate manner
- Prosecuting, or assisting local authorities to prosecute, significant breaches of environment protection legislation, in a timely manner
- Assisting local authorities to improve their environment protection performance on a case-by-case basis, through the establishment of an enforcement network to promote the exchange of information and best practice, and by the provision of appropriate guidance.

MM: Are the courts strict enough on polluters?

MK: Most cases are prosecuted in the District Courts where the maximum penalty is €3,000 and/or six months imprisonment. The Courts have complete responsibility for deciding on the level of fine to be levied on polluters. To date, the EPA has taken 120 cases in the District Court and has been successful in the vast majority. In general we find that District Court Judges do take the environment very seriously and are prepared to convict for breaches of licence. More serious crimes against the environment are taken on indictment, and must be taken by the DPP. Penalties here can be up to 10 years imprisonment and/or €15 million. Recently the number of cases taken on indictment by both Local Authorities and the EPA has increased and this is a trend I expect will continue.

MM: Are the fines imposed by the different Acts enough of a deterrent?

MK: On the face of it, €3,000 does not seem like a big deterrent to a company or organisation involved in a commercial enterprise. On the other hand, the negative publicity coupled with the fact that they will have to make good the damage caused and will often have to invest very significant sums in abatement equipment or process changes means that the fine is only the tip of the iceberg in many cases. However, from a public perception point of view, the fines are extremely low and do not seem to put much value on environmental protection. The EPA focus here is on environmental outcomes – in other words achieving what is best for the environment. Our experience has been that following prosecutions, companies and organisations generally do take the required remedial action, which often requires significant additional levels of expenditure. In the small number of cases where action is not forthcoming, it is open to the EPA to return to the Courts for further redress.

MM: The Minister / Tánaiste was asked to carry out another investigation regarding Askleton. What does the EPA think of this?

MK: The joint investigation into animal health problems at Askleton by four State Agencies was one of the most intensive scientific investigations ever carried out in Ireland. The EPA is satisfied that the investigations were carried out in a rigorous and scientific manner and stands over the findings of the report.

MM: The EPA monitors Irish rivers in a 3 year cycle. Is this enough?

MK: As required under legislation (EPA Act 1992) the EPA publishes a national monitoring programme for rivers and lakes, which specifies the extent and reason for monitoring and to whom responsibility is assigned. The National Rivers Monitoring Programme comprises two main sub-programmes:

- the ecological monitoring programme
- the physico-chemical monitoring programme.

The bulk of the ecological programme is carried out by the EPA but the Central Fisheries Board and local authorities undertake some sampling. The programme is completed in a 3 year cycle, with some 3,200 sites monitored covering of over 13,200 km of channel length and provides information on long term biological trends.

In the Physico-chemical programme the EPA carries out ambient river monitoring in its regional laboratories on behalf of a number of local authorities, while other local authorities undertake their own monitoring. EPA laboratories also undertake specialised sampling and analysis. The information from the chemical programme is published on a 3-year basis, though interested parties can assess the information as it becomes available.

In total over 4,700 different sites on Irish rivers are included in the National Rivers Monitoring Programme, providing information for a variety of purposes. For example, managers taking decisions to upgrade treatment works, planners deciding whether to refuse or grant planning permission, scientists issuing IPPC Licences require detailed data on the potential or actual impact of their decisions.

MM: What do you feel you have personally achieved for the EPA since being appointed DG?

MK: Since joining the Environmental Protection Agency in May 2002, I have led a major process of change in the EPA which involved reviewing activities and restructuring to be able to face new challenges. I feel I have achieved a new focus on enforcement with the establishment of the Office of Environmental Enforcement, overseen the establishment of a new Emissions Trading Unit for carbon dioxide emissions, which delivered a National Allocation Plan efficiently and on time, and streamlined many processes within the EPA which will allow us to continue to deliver a first class service to all our stakeholders. One of our major areas of focus for the future is the stamping out of illegal waste activities. Of course, none of this would be possible without the full participation of the extremely dedicated and expert staff in the Environmental Protection Agency, whose commitment to the environment and its protection is second to none. I am extremely privileged to work with such a dedicated and professional group of people.
The scenic coastal village of Rosscarbery has excelled in achieving the highest standards of care for the environment. Having flown the Blue Flag on the Warren Beach for a number of years the Celtic Ross Leisure Centre has been awarded the White Flag, while Mount Saint Michael’s Secondary School’s Green Flag billows happily in the South West wind.

Four secondary schools in Co. Cork have been awarded the Green Flag by An Taisce having implemented the Green Schools Programme successfully. The four schools are Clonakilty Community College, Glanmire Community College, Scoil Eoin Ballincollig and Mount Saint Michael’s Rosscarbery. Mount Saint Michael’s, a co-educational school, is unique in this grouping. As a rural school, recycling facilities are limited and food waste is problematic as all students stay in school at lunch time. The categories of waste generated are multiplied due to the wide range of practical subjects taught. The positive aspect is that being situated in such scenic surroundings offers opportunities for developing the outdoor environment are exciting and inviting.

Three years ago a group of students recognised that greater care should be directed towards the school’s environment. A review of the school as well as a questionnaire to all students showed that strategies for initially waste management would be the main target of their Action Plan. They adopted Cork County Council’s logo ‘Reduce Reuse Recycle’ as their Green Code and set SMART targets to implement their plan (Specific, Measurable, Achievable, Relevant, Time-Related). Three years later what has been achieved?

To facilitate waste management a whole new range of bins are in use; fitted bins for outdoors and colour-coded bins for indoors. Students respond positively with the greater majority using the appropriate bins for separating waste. A rota of students collect the paper and plastic from colour-coded bins. All this material is recycled.

To deal with the 32kg+ of food waste per week a wormery was established in the base of the old greenhouse. Chemistry students ensure that worms are warm, comfortable and healthy by monitoring moisture (70% temperature (25°C) and pH levels (5–8). Egg shells are used to offset acidity, while shredded paper and cardboard are added to the food waste to create a suitable worm habitat. Composting activity slows down in winter and an alternative food recycling method is provided by hens who enjoyed the food so much last year that they stopped laying when summer holidays deprived them of their tasty bits. All of the school’s food waste is now being recycled.

The provision of recycling facilities by Cork County Council in conjunction with Tidy Towns Committee in 2004 makes the recycling of paper and plastic a much more manageable task for the Green Schools Committee. The school has its own recycling bin, which has reduced waste by approximately 25kg per week. The amount of paper and plastic which goes to landfill, being mindful that some forms of plastic may never disintegrate. Plastic bottles are reused to provide take-home holy water in the local church, a service which is much appreciated by the local community.

Sawdust from the material Technology Wood class, which formerly went to landfill, is now used as animal bedding while waste wood scraps are used for firewood. Waste metal scraps are also stored for recycling. The committee has now exceeded the governments target for waste reduction.

The Green Schools experience has made the school a cleaner, healthier, more pleasant place to work in and has raised awareness in the whole school community regarding what is possible to achieve in waste management.

What Next?

Application to retain the Green Flag is made every two years. The next stage is to monitor energy and water conservation as well as caring for the outdoor environment. Wild flowers will be planted in the spring to attract bird life. Nesting boxes and bird tables will be provided in the adjoining woodland and in a setting such as Rosscarbery the opportunity for involving the wider community in long-term whole school action for the environment are endless.

The programme has been a great confidence builder for students; it has provided invaluable experience in goal setting, monitoring and evaluating as well as the encouraging experience of seeing goals and objectives achieved. Green Schools in Ireland is operated and co-ordinated by An Taisce in partnership with local authorities throughout the country. Anyone interested in the programme can contact Green School’s office, An Taisce, Tailer’s Hall, Black Lane, Dublin 2. Tel 01 7077067 or email greenschools@antaisce.org

Henry Chichester Hart (1847-1908), botanist and polymath

JOHN AKEROYD looks at the life and achievements of one of his botanical heroes

IRELAND has produced remarkable naturalists, but rarely such a talented group as lived and worked in the half-century before World War I. The years 1866–1916 were momentous times, both for nationalist politics and the literary “Celtic revival” – and also “the heyday of Irish Botany”. In 1866, as Fenians hatched rebellion against the Crown, appeared Cybele Hibernica by Alexander More and David Moore, a first detailed account of the distribution of Irish plants. It kick-started a series of publications on Ireland’s plant life: local Floras, plant lists and botanical papers, with a final magnificent flourish in Reginald Scully’s Hibernica by Alexander Robert Lloyd Praeger – and valuable. Unsold stock of Flora of the County Donegal, was a casualty of the Easter Rising, destroyed in one of the uncontrolled fires that burned in Dublin during those difficult days of 1916. So, if you possess a copy, guard it with your life! Other memorials to Hart are a distinct population of Irish Saxifrage (Saxifraga rosacea subsp. hartii) found only on Aranmore Island off Mayo; and Vicia sepium subsp. hartii, a dwarf variant of the common hedgerow Bush Vetch, restricted to sand-dunes in NW Ireland and W Scotland. I have a special affection for this neat hummocky vetch, first reported in Hart’s Flora. I named it myself, in a memorial volume for Professor David Webb, who introduced me to the life and work of Henry Chichester Hart in 1979 when I first came to Ireland!

At Aughinish we extract over 1.5 million tonnes of alumina per annum from imported Bauxite. We export this alumina to UK, Scandinavian and other European smelters where it produces over 0.75 million tonnes of aluminium. This versatile metal has worldwide appeal for its lightness, durability and versatility, and it is completely recyclable.

Incorporated into the fabric of Aughinish is a network of Nature Trails available to the general public and ideal for strolling, jogging, nature study or bird watching. There are four bird hides along the trails for the study of the migratory bird visitors to the Shannon estuary, especially between December and March. We also have a butterfly sanctuary, a dragonfly sanctuary and we are working on a pair of promising corncrake meadows. Our Visitor Centre is open all year round.

Dr John Akeroyd, who has studied Irish plants (and botanists) for 25 years, edited The Wild Plants of Sherkin, Cape Clear and adjacent islands of West Cork (1996).
by Julian Wylie

RECORDS for 2004 were made from 10th April until 30th November. A total of 135 species were recorded on or from Sherkin Island. Of these, 51 species bred or attempted to breed on Sherkin, and a further six species bred on islands elsewhere in the bay. Great Crested Grebe, Yellow-legged Gull and Brant were recorded for the first time and Long-eared Owls were recorded as breeding for the first time. Mediterranean Shearwater, Marsh Harrier, Whimbrels were indicative of spring passage.

May

May was calm and fairly warm throughout with the maximum temperature exceeding 15°C on 19 days. It was also dry, with only 26mm rainfall no doubt helping breeding species, and first broods of many species started to appear. One of highlights of the year was the discovery of a brood of three Long-eared Owls, whose ‘rusty-hinge’ calls could be heard over the next few weeks in Kilmnoon and Gneeves. Water Rail and Snipe were present in suitable habitat, and Chiffchaff, Goldcrest, Blue Tit, Great Tit and most of the breeding finches were all present in above average numbers. House Sparrows also showed signs of a slight recovery. On

April

April was generally cool with variable light winds until strong north-easterlies from the 27th. There was 53mm rainfall during the month. Many of the commoner migrants were already in residence when observations began with Sand Martin, Swallow, Wheatear, Willow Warbler and Chiffchaff all making their presence known. The Great Northern Diver flocked off Drolain Point numbered 23 on 12th and other birds at this site included a handful of Red-throated Divers, a mixed flock of c200 Guillemots and Razorbills, Common Sandpiper and Sandwich Tern. A pair of Mistle Thrushes showed signs of breeding before they abruptly departed and Gadwall also looked promising at two sites – maybe next year! Grey Herons at East Kinish had young in the nest mid-month, and the already bustling Fulmar colony at Foleidoughna featured a pair of Ravens as its centrepiece. Seawatches from Reenabulliga provided good numbers of Manx Shearwaters and three species of skuas. Towards the end of the month, the list of breeding species was boosted by the arrival of Cuckoo. Sedge Warbler and Whitethroat. A Marsh Harrier, two Greenland Wheatears and the first of a good run of the debit side, there were no Rock Doves or Coal Tits breeding on Sherkin this year. Migrants were few, although a female Snow Bunting at Reenabool on 3rd was a good spring record. A large falcon seen briefly over Horseshoe Harbour in mid-month was tentatively identified as a female Gyr Falcon, and was possibly the same bird seen on Cape Clear the previous week, but frustratingly it wasn’t seen again and identification could not be confirmed. Consolation came in the form of a 2nd year Iceland Gull also over Horsehoe on the same day. A change to lighter easterly winds towards the end of the month brought about brief visits by a female Merlin and a male Blackcap along with the first Swift of the year, but little else. Sandringhams made a rare flight and fleeting spring visit to Silver Strand.

June

June began very dry, with less than 5mm rainfall before the 20th, although over 60mm fell between then and the month’s end. Temperatures were warm, exceeding 17°C on 23 days and winds were again light and variable. Each of the first half of June was spent surveying breeding birds on the other islands in Roaringwater Bay. Arctic Terns were present in higher numbers than in recent years and Red-breasted Mergansers were confirmed as breeding on West Calf and the Carthy’s. Numbers of Fulmar and Shag remained stable, although Cormorants were slightly down on last year. Gadwall, Water Rail and Raven were all present on East Calf, though there was no sign of Mute Swan there this year. Sedge Warblers extended their range to West Calf and Castle Island, and Goldcrest was a new breeding species for Heir Island. Conversely, Herring Gulls continued their steady decline, whilst Wheatan were seemingly non-existent. Back on Sherkin, a pair of Peregrines fledged young for the fourth year, with two noisy juveniles much in evidence at the month’s end. Non-avian excitement was provided by a group of Fin Whales off the south coast mid-month.

July

July was warm with generally light westerly winds, with temperatures exceeding 20°C on two days. There was 45mm rainfall during the month. Return wader passage started promptly on the 1st of the month with a Common Sandpiper calling over the Marine Station at midnight and two Redshanks at the Lagoon later in the day. The first Grey Wagtail of the year was seen at Tramore on the same date. A Hobby on the 8th was notable. Seabird passage was by now well underway, with Great and Cory’s Shearwaters and the first of many Sooty Shearwaters adding a spice to the last day of the month.

September

September was generally warm and wet with 110mm rainfall during the month. With the exception of light easterlies at the end of the first week, winds were generally light and westerly. Three adult Sabine’s Gulls on the 1st and 2nd were welcomed. A pair of Sooty Shearwaters was the first of many Sooty Shearwaters, with the first of many Sooty Shearwaters, with the first of many Sooty Shearwaters. A pair of Sooty Shearwaters was the first of many Sooty Shearwaters. A pair of Sooty Shearwaters was the first of many Sooty Shearwaters. A pair of Sooty Shearwaters was the first of many Sooty Shearwaters.

August

August was a mixture of sun and rain, with 115mm rainfall and temperatures exceeding 20°C on eight days. Winds were generally light and westerly. Badger Island played host to a 100 plus Kittiwake roost from which birds could regularly be seen feeding at the month’s end. Gannets were regular in the company of Sandwich and Arctic Terns. Visible migration was apparent from 8th in the form of c200 Meadow Pipits along with lesser numbers of Skylarks and Song Thrushes heading southwest over the Marine Station. Other diurnal migrants during the month included Hirundines, and good numbers of Grey Wagtails and Redpolls. Both Kestrels and Sparrowhawks became a more or less daily sight across the island. Seabird passage steady, with Red-throated Divers and Arctic Skuas adding variety and Grey Heron and Peregrine both being somewhat unexpected. A Mediterranean Shearwater

Ornithological Review of 2004

A newly hatched chick on Goat Island, Roaringwater Bay. Twenty species of bird were found to have bred and attempted to breed on Sherkin Island in 2004.
Phytoplankton Review of 2004
By Wendi Briggs

The phytoplankton team of 2004 continued the monitoring program in and around Roaringwater Bay and south of Sherkin Island that has been ongoing since 1978. Phytoplankton sampling began in mid-April and carried through until mid-October. Sampling consisted of trips that included 8 stations within Roaringwater Bay and 4 stations located south of the bay to a distance of twelve miles into the open ocean. These trips occurred approximately every 10 days (weather permitting) and sampling at one station between Sherkin Island and Heir Island occurred every 4 days. Over 80 sampling trips were completed this sampling season.

There were two major blooms during the sampling period. The first involved the diatom, Chaetoceros socialis appearing in large numbers (approximately 1,161,516 cells/litre) in the Bay and South stations at the end of April and beginning of May. The second involved a bloom of the dinoflagellate Karenia mikimotoi (formerly Gysidium aureolum), which appeared mainly in the bay stations in July for approximately two weeks. The maximum number of Karenia found in one sample was on July 16th where 338,000 cells per litre were observed at a station located 8 miles south of Sherkin Island.

Noctiluca scintillans made an appearance in the waters of the Bay in August. This bioluminescent dinoflagellate is observable to the naked eye at night due to its ability to glow when agitated. If any readers saw glowing seaweed or sparks of light in the water this summer it may have been caused by this interesting phytoplankton species.

In comparing the 2004 data to that collected in 2003 there appear to be some noticeable differences. Dinoflagellate species did not begin to appear in significant numbers until the end of June, dominating the species counts until September when diatoms began to re-appear in greater numbers. The dominant species found in the summer months were Karenia mikimotoi, Ceratium furcatum (max. 9000 cells/litre), Proorocentrum micans (max. 3500 cells/litre), Dinophysis acuta (max. 2700 cells/litre), and various species of Protoperidinium. In 2003, dinoflagellates were found in greater numbers in the beginning of the season and remained fairly constant throughout the summer months with a slight increase in August.

The stations south of Sherkin Island experienced lower phytoplankton counts than the stations within Roaringwater Bay. The dominant species in the south stations was the diatom Fragilaria spp. reaching 79,200 cells/litre. Overall, the number of species was lower especially in the samples taken from greater depths (25, 30 and 50m) and this trend continued throughout the sampling season.

Further study of the data collected is sure to reveal more interesting information on changes in the distribution, population and species composition of phytoplankton in Roaringwater Bay and south of Sherkin Island over the years.
How is your MPA doing?
A Guidebook of Natural and Social Indicators for Evaluating Marine Protected Area Management Effectiveness
By Robert S. Pomery, John E. Parke, Liam M. Watson
IUCN - The World Conservation Union
www.iucn.org
ISBN: 2-8317-0375-8
PRICE: €16.50/€/2004

A guidebook offers managers and other conservation practitioners proven tools and methods to evaluate the effectiveness of marine protected areas. Section One includes selecting the indicators, planning and conducting the evaluation, communicating results and adapting management. Section Two – the MDA management effectiveness indicators – is designed to work with the areas and will because of its broader focus, be adaptable to all types of marine protected areas. The guidebook is intended to help decision makers assess the effectiveness of MPAs and determine areas for improved management. It is essential reading for managers of MPAs and will be of interest to managers of national parks, marine reserves and other protected areas.

Books reviewed by: Anne Marie Mahon, Rachel Jacobsen, Matt Murphy, Julian Wyllie

A Unique Irish Habitat
A Guide to the Shannon Estuary
Edited by J.E. Thorpe
Blackwell Publishing
www.blackwellpublishing.com
ISBN: 0-632-03899-0
PRICE: £39.50/2003

Wild and Wonderful
By Emma N. Lynam
Townhouse Dublin
townhouse.ie

A gem of a book on the Irish shellyfish. Each chapter is laced with historical background on harvesting. The story of a particularly fishery being started in the early 1800s by the eminent marine biologist. Holt and Tattersall at Adirondack Experimental Oyster Station makes wonderful reading. By the way, there are recipes for each chapter for cooking shellfish. Cockles, mussels, scallops, oysters, winkles, limpets and whelks. Of course all of this brings one up to date on the conservation of shellfish in Ireland. His final words in the foreword say it all. “This book is intended to celebrate the work of the fishermen, the researchers, the shellfish farmers, the chefs and the agencies that bring this about.”

A Life in the Wild
By Éamon de Buitlear
Gill and MacMillan
www.gillandmacmillan.ie
ISBN: 1 711 30159
Price: £24.99/2004

Here we have the autobiography of a man of many achievements. From childhood days by the River Dargle in Wicklow, we are taken through harder times selling bag full fishing rods and by-catch in Dublin to his role as a key player in the traditional Irish music scene. Throughout his activity he is a faultless switch to highly respected wildlife filmmaker and broadcaster. The list of players is subtle but impressive and includes many of Dublin’s finest, including the likes of David Attenborough and Killian Mullany. A fascinating account of a life in Ireland from what is now the last century.

The Shannon Airport
Largy Rock: A Unique Irish Habitat
By John N. Murphy, Austin Conne, John Rattigan & Tom Lynch
Birdwatch Ireland
www.birdwatchireland.ie
ISBN: 0-954305-0-1
Price: £0.00/2000

How many of the hundreds of thousands of passengers using the Shannon airport regularly realise they are just 500 metres away from a true wildlife haven? The lagoon was created in the 1940s as a direct result of development at the airport. It has since become a must on any birdwatching itinerary of western Ireland. During autumn, winter and spring, the site acts as a magnet for thousands of migrants birds, supporting internationally important numbers of Black-tailed Godwits. The 168 species recorded there includes an impressive total of 33 different waders and several rarities. In summer, a wealth of plants and insects more than compensate for a less than convenient location. A really attractive guided tour could be arranged to help ensure prompt further investigation.

Publications of interest

Alive in the Wild
The Shellfish and Shelledfishes of Ireland
By Noé P. Wilkins
Tir Eolais, Newtownlynch, Kiltworth, Co. Galway
ISBN: 1 87802 20-4
Price: €15.99/2004

A gem of a book on the Irish shellfish. Each chapter is laced with historical background on harvesting. The story of a particularly fishery being started in the early 1800s by the eminent marine biologist. Holt and Tattersall at Adirondack Experimental Oyster Station makes wonderful reading. By the way, there are recipes for each chapter for cooking shellfish. Cockles, mussels, scallops, oysters, winkles, limpets and whelks. Of course all of this brings one up to date on the conservation of shellfish in Ireland. His final words in the foreword say it all. “This book is intended to celebrate the work of the fishermen, the researchers, the shellfish farmers, the chefs and the agencies that bring this about.”

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The Atlas of Water
Mapping the World’s Most Critical Resource
By Robin Clarke & Jannet King
Earthscan
www.earthscan.co.uk
Price: £17.95/2003

The 2030 Spike
Countdown to a Global Catastrophe
By Colin Mason
Earthscan
www.earthscan.co.uk

This book provides detailed analysis on the subject of sustainable development following the World Summit on Sustainable Development (WSSD), 2002. Assesses contributions from leading experts, it includes a wide range of varying subject ranges such as security, climate change, human rights, globalisation, poverty, agriculture and tourism and how they all relate to the issue of sustainable development. A key text to the implementation of agreed policies and programmes since WSSD, and a vital resource to anyone studying or researching sustainable development.

Countrywide Planning New Approaches to Management and Conservation
Kevin Bishop & Arian Phillips (eds)
Earthscan
www.earthscan.co.uk

The past thirty years has seen a welcome change in the attitude towards the management of our natural heritage. Countryside planning and conservation are now major political tools and come under intense scrutiny from the public. Drawing on a series of case studies, this book reviews the effectiveness of policies to date and outlines possible courses for sustainability for the future. Although dealing largely with cases from England, the chapters on Irish landscapes and wind farm development make it essential reading for all concerned, from planners and local authorities to environmentalists and academics.

Water for People, Water for Life
The United Nations Water Development Report
UNESCO Publishing
www.unesco.org/publishing
ISBN: 92-3-10383-3
Price: €16.00/2002

This book provides a lively and well-illustrated introduction to the biosphere reserve concept and its implementation. It brings together a wealth of up-to-date full ration on the subject and includes objectives of the Seville Strategy for Biosphere Reserves, a basic framework for the development of biosphere reserves, an introduction to the different sections, and a draft management and prospects for the future. It will appeal to anyone interested in the conservation of biodiversity.
**DORIES**
(Pisces: Zeidae) in Irish & NW European Seas

By Declan T.G. Quigley

The Zeidae is a small family of marine fishes comprising 7 genera and 13 species worldwide. However, in NW European seas, the family is represented by only 3 genera including 3 species: John Dory (Zeus faber), Sailfin Dory (Zenopsis conchifer) and Red Dory (Cytopsis rosus). While the John Dory is relatively well known in Irish waters, the other two species, which have only been recorded for the first time in recent decades, appear to be rare.

**John Dory (Zeus faber)**

The John Dory, also known as St Peter’s Fish, is unmistakable with its deep, flattened head and body, massive protrusive jaws, a series of long dorsal spines (9-11) extending into long filaments of soft trailing tissue, and a double series of sharp spines (bucklers) running along the belly and back. It is generally yellowish brown in colour with a conspicuous black spot (or thumb mark), surrounded by a narrow yellow border on each side of the body. An inshore species, usually occurring at depths of 5-150m, it occurs from as far north as Norway and from Uruguay southwards to South America. In the western Indian Ocean, it is found from South Africa northwards to Somalia, and off the SW coast of India. It has also been recorded from Indonesia but not the SW coast of India. It has also been recorded from SW Norway and South Africa. It has also been recorded from SW France (1976) and into Irish (1980) waters was 21–51cm but most landings were in the range 23–39cm. The largest specimen, weighing 3 kg, was captured in Killala Bay, Co Mayo in August 1984. However, the vast majority (96%) of specimens weighed <3 kg. Incidentally, the UK record and line record, weighing 5 kg, was captured off Newhaven, E Sussex, in 1977.

**Sailfin Dory (Zenopsis conchifer)**

At first glance, the Sailfin Dory would appear to be very similar to the John Dory. Indeed, it was possible that the species may not be recognised by anglers or commercial fishermen in Irish waters. Apart from its distinctive silvery-grey colouration and spinous dorsal fin (where John Dory is absent) from the SW coast of India, the Sailfin Dory has been recorded from the SW coast, at depths ranging from 50–150m. The species exhibits wide variation in size: 18–58 cm (Mean T.L. 39 cm) and 75–2300 g (Mean Wt 785 g).

**Red Dory (Cytopsis rosus)**

The Red Dory is a relatively small species (maximum 31 cm T.L.) and is unknown from NW European seas. However, since then, the species would appear to have been gradually extending its range northward. It is found from South Africa northwards to Somalia and off the SW coast of India. It has also been recorded from the western Pacific: SW China, SW Indian and SW Pacific. Although only 3 species have been recorded to date, it is interesting to note that two of these species were captured during 1993, which coincided with the large influx of Sailfin Dory mentioned above. Two of the specimens were recorded in July and one in April. All of the specimens were recorded from the SW coast, at depths ranging from 200–440m. The specimens were relatively small in size: 11.1–19.3 cm (Mean T.L. 14.7 cm) and 50–158 g (Mean Wt 104 g).

Prior to 1963, when the Red Dory was recorded for the first time off SW Portugal, the species was unknown from NW European seas. However, since then, the species appears to have been gradually extending its range northward via SW Poland (1968–76), into NW French, SW Irish and SW British waters (1980–84). Although more than 2 species have been recorded to date, it is interesting to note that two of these species were captured during 1993, which coincided with the large influx of Sailfin Dory mentioned above. Two of the specimens were recorded in July and one in April. All of the specimens were recorded from the SW coast, at depths ranging from 200–440m. The specimens were relatively small in size: 11.1–19.3 cm (Mean T.L. 14.7 cm) and 50–158 g (Mean Wt 104 g).

**Figure 1. John Dory Capture Locations: % Red-Caught Specimens vs Commercial Catch**

**Figure 2. Specimen John Dory (1960–2004) Monthly Frequency Distribution**
220,000,000 Acres Under the Sea . . .

Ireland has 220 MILLION acres of underwater territory, a total area ten times that of the land. In the year (1999) an ambitious project to map this entire area was started by the Geological Survey of Ireland together with the Marine Institute and other partners in the Irish National Seabed Survey.

When it was announced, the INSS was the largest science project ever funded in the history of the Irish state and has evolved into the largest seabed mapping project in the world, costing €12 million over the initial ten year time-frame.

Until recently, most of the charts around the Irish coast dated back to the time of Captain William Bligh, commander of the infamous HMS Bounty. Bligh was a master mariner and compiled many of the charts of Irish waters, including detailed maps of Dublin Bay.

Power from the Sea . . .

At the international Energy 2004 scientific meeting in Galway last year, it was stated that Europe could generate up to 200 million megawatt hours of electricity, enough to run 20 million homes from the waves and tides in the sea.

In England the Swansea Project harnesses the power of the tides by inventing a huge propeller into the current off Llynmoch in the Bristol Channel.

Tidal energy is non-polluting, renewable, and does not use fossil fuels.

What’s in a Mermaid’s Purse?

“Mermaid’s Purse” are egg cases containing the live baby of dogfish.

Check out these cool websites:

www.gisnbs.ie
The Marine Institute
The EuroOcean Meeting 2004
Mermaids Purse
Tidal Power
Captain Bligh
A Reminder to Feed the Birds!

By feeding wild birds in our garden we can help many birds make it through the hardships of the winter months. Birds have many pressures on them from loss of habitat, so a reliable source of food can make all the difference to the birds in your area. Here are some ideas about how to help these birds.

A simple wire mesh peanut feeder will attract a host of birds to your garden. Greenfinches, Great Tits, Blue Tits, Coal Tits and House Sparrows will all willingly feed from this type of feeder.

Peasants are not the only food you can put out. A small plastic seed feeder will enable you to supply sunflower seed. Many shops sell ‘wild bird seed’, a mixture of sunflower seed and various types of grain which the smaller birds are unable to eat and throw out onto the ground (where it will attract crows and pigeons). Pure ‘Black Sunflower’ seed is more popular than the ‘striped’ variety which has a tougher shell and less energy-rich kernels – and yes the birds can tell the difference! Sunflower seed is especially popular with Coal Tits.

Not all birds feed from feeders, and a selection of old apples and pears from the local market placed around the garden will attract such birds as Blackbirds and Song Thrushes, as well as Starlings. During hard weather you might also get Redwings visiting your garden to feed on the apples.

Finally don’t forget to provide a fresh supply of water. This can easily be done by placing an upturned dustbin lid between two bricks and filling it with water. Place a small rock in the centre so birds won’t get stuck and drown.

Don’t forget to take part in BirdWatch Ireland’s Garden Bird Survey!

Download your form at www.birdwatchireland.ie

Visit the Migration web site to learn about watching and identifying migrating birds.

Visit the Migration web site to learn about the fascination of bird migration.

Visit the Working with Birds web site to learn about watching and feeding birds.

Lisa Leahy, Fieldfare

Where do Redwing come from?

The first five correct answers drawn will each receive a copy of ‘The Usborne Spotter’s Guide to Birds’ Answers on a postcard to ‘Sherkin Comment’, Sherkin Island Marine Station, Sherkin Island, Co. Cork.

Redwing

Redwings are not hardy birds, more so than Redwings and as a result often stay at high altitudes, only coming to the coast in hard weather. They also feed primarily on berries and other hedgerow fruits and are often seen in open fields foraging for worm, often with Redwings as both species mix freely. In the Spring the Fieldfare flies back to its Eastern and Northern breeding grounds.

When very cold weather arrives in the continent, both species fly west to Ireland to escape the freezing conditions which make feeding so hard for them. It is then that they can be seen in greater numbers than normal. If the cold prevails in Ireland and there is snow on the ground for more than a day or two both of these birds can be seen to visit gardens to take advantage of both garden berries and fallen apples. Often the simple task of pulling a cluster of apples and putting the snow in your garden will bring these lovely visitors into your garden. Although many species are affected by cold weather, Redwings seem especially prone and many birds fail to survive a prolonged cold spell.

Declan Murphy, Office Administrator, BirdWatch Ireland, Rockingham House, Newcastle, Co. Wicklow.
Managing your Household Waste

Each year, Ireland as a nation dumps 1.2 million tonnes of household waste into landfills or ‘dumps’ around the country. That is enough to fill Croke Park three and a half times over!

The sad thing is that much of this waste could simply be reduced, reused, recycled or composted, protecting our environment and saving our landscape.

You can start playing your part today by managing your household waste – it’s easier than you might think!

Household Waste Management

This guide is packed with advice and tips to help you reduce, reuse and recycle your household waste – small changes that will make a big difference to our environment.

Compost at Home – a beginners guide

This guide contains all you need to know about turning kitchen and garden waste like vegetable skins, tea bags and grass clippings into a rich compost that will give your plants and flowers a new lease of life.

For a FREE COPY of Indaver’s guides:
Phone 021 – 4554040 e-mail info@indaver.ie

Sherkin Island Activity Book – produced by Sherkin Island Marine Station

Sketches: © Sherkin Island Marine Station

Our Fishing Expedition

Safety Sam loves to go fishing with his Uncle Jim in their little boat called "The Gannet". Before they set off Sam does a Safety Check.
Can you help him by filling in the blanks?

1. The sea is ______, so it is safe to set out.
2. I am with an _______, my Uncle Jim.
3. Our boat, "The Gannet", is ________
4. We are both wearing _______
5. We have told Auntie Mary that we are going to ______
6. And Auntie Mary expects us back at _______
7. We have checked the weather and there is going to be _______
8. Uncle Jim has his _______ in case of an emergency

Can you find out how many fish we caught? They are hidden around the page.

Answers on page 29

From the booklet "Safety Sam Activity Book" – produced by Sherkin Island Marine Station

Sketches: © Sherkin Island Marine Station
HERB STUFFED
WHITING
WRAPPED IN
CRISPY BACON

Warm up with whiting, filled with your favourite stuffing and wrapped in crispy bacon.

INGREDIENTS
• 4 whiting fillets – trimmed
• 4 streaky rashers

STUFFING
• 55g / 2ozs butter
• 1 onion – finely chopped
• 55g / 2 ozs brown breadcrumbs
• A small bunch of parsley
• A few sprigs of dill/marjoram/thyme
• Salt and freshly milled pepper

METHOD
• Soften onion in melted butter, add all stuffing ingredients.
• Cut fillets in half lengthways.
• Place stuffing on each fillet and wrap a thin slice of streaky rasher around each roll.
• Place in buttered ovenproof dish, cover and bake for 15 minutes at 190°C/375°F/Gas 5.
• Remove cover for last 5 minutes to crisp the bacon.
• Check seasoning and serve sprinkled with parsley and chives.

Serves 4.

FOR VARIETY
Substitute cod, haddock, hake, herring or mackerel.
FOUR GRIELING DAYS!

By Declan Conroy

WHILE many people turn to confession or pilgrimages as a way of forgiveness I for some reason prefer to shed my sins through a tougher method.

This was achieved when I saw through a grueling four days of hell in an army survival challenge in conjunction with The President’s Award and the 2nd Field Artillery Regiment in the naturally landscaped and rolling hills of the Wicklow Mountains. I was joined by a further twenty-five other award participants from throughout Ireland who had all decided like myself to apply for a chance of a place on the four-day event and who were lucky enough to be chosen to undergo this challenge from June 1-4.

While I had arrived at the McKe Barracks at 11am with the bare essentials I did notice some of my fellow participants arriving with suitcases and carrier bags. But it wasn’t long before they were all swapped for army sacks. Splitting into four teams of five each and joined by our soldiers we were then shipped off to another part of the bar racks. There we were presented with proper army gear, before changing in record time and repack ing our bags having reduced their contents to the important items. It was only then that everyone began to realise where we were and that we were receiving food commands from all angles.

By 2pm we were packed into the army trucks and out of the barracks to later arrive at our first destination, Blessington Lake. We then began to make up our shelters for the night and when I say shelter that’s exactly what they were - just a basic piece of canvas tied to four trees with our sleeping bags having reduced their contents to the mountains inhabitants. We were then given our dreaded rations packs – our food supply for 24-36 hours and our basic cooking equipment.

After a number of training lectures we were presented with our first team task. This was where we had to make a raft from barrels, rope and other materials scattered through the woods. This proved to be quite a struggle because apart from the fact that others tried to “steal” our barrels, it also didn’t help that we hadn’t a clue how to build one. By the end, our creation had similarities with the ill-fated Titanic. It had taken a long time to build, it was a tonne weight and the only thing that was yet to be tested was would it sink in water? By 9pm our day was done and with everyone in high spirits we took the time to make new friends before we made enemies throughout the days to follow.

Wednesday took off with an early start when we were literally dragged from our tents at 6am that morning. By 7am we were down at the lake trekking towards the mountain with an unsteady raft on our shoulders and with icy water making our thoughts of a warm bath disappear. After many attempts to stay on the raft and with the water not getting any warmer we all decided that our only chance to get our raft to safety was to swim it across ourselves as it seemed that it was more at risk of sinking than we were.

Our first challenge we met with a speed boat that came to rescue us in our hour of need leading us to our second task which was close to a field of sheep where we then awaited our next journey this time via helicopter. This was beginning to leave me under the impression that we weren’t going to have it half as hard as expected that was until we were handed a map. Once the chopper landed and deposited us on top of a mountain somewhere in Wicklow.

While the sun was shining high on the picturesque mountain side, the surrounding view of mountain peaks were breaking through until they literally took our breaths when we were pointed towards our destination. After hours of trekking over sheep skulps and jumping into holes we finally reached our second base seven miles later without the help of our soldier who had earlier put us off a route that would have had cut our journey in half.

Following our minor expedition we later had to put, to the best of our ability, the remainder of our first aid knowledge to use. This again proved very difficult having only brought a first aid kit and a stick for our ‘false casualty’ who, by the time we reached the ambulance, actually needed proper medical attention after receiving numerous knocks and falls during her haulage from the woods to the finish line. The only concern that I had was what would we have done had we encountered a real emergency and first aid was required from my teammates because our ‘casualty’ had ‘died’ the second we were left in control.

Once we had recovered from our second killer challenge we were then taken away to yet another unknown destination where we had the hardest task yet. This one was looking forward to as it involved fighting the soldiers for our second supply of food. Having dieted for 12 hours there was 26 angry faces, covered in green and black ‘army muck’, ready to take on anything within a ten-metre radius. The only disadvantage was that they had machines guns (don’t worry – no injuries occurred), flares, booby traps, and night vision goggles while we had NOTHING. After 15 minutes of pure adrenalin and our eagerness to attack, there was no hesitation in running like vultures and getting to our food.

At 6am the following morning no one was in the mood for having only reached camp at 2am that night. We then made our way to the top of yet another mountain but this time it was a different story. Apart from the fact that the peaks were a lot more severe it was quite different as the only thing that could be seen was the tip of lit cigarettes smouldering in the rain. It was then that we had to get the mileage up and to do so we had to put our orienteering skills into full use. While everything was going according to plan amidst the fog and rain it all began to change when I got my hands on the compass. Although I did lead my teammates over the mountains I did accidentally miss one of the paths due to the fog. This led to tears, as an extra three-mile of misery, complaining and blistered feet was added on to our 10-mile route!

Eventually reaching Glendolough an hour later, our delight was noticed when we saw a chip van in the distance, this was our first recognition of proper food since mammy’s home cooking that Monday.

After the short break ended we again were moved a few miles away where three ropes were laid across a cliff. This was great fun for some and hardship for more having to walk, crawl and swing from these ropes. This was later accompanied by a well-earned barbeque and learning fast we realised the more complaints thrown in the chef’s direction the more food you got thrown.

The final morning was more than the limit for everyone, having to arise right at the crack of dawn, at just 5am. Arriving at Lough Dan for the final challenge of the adventure was 26 sleepy and newly assigned canoesists who were all given the chance to paddle across the lake. After a kilometre of canoeing the fun was no longer to be seen as everyone was left sore, cold and tired.

After an uncomfortable sleep in the Army transport on our journey back to the barracks everyone began to look on the bright side as the event came to a close, especially when we had a shower, changed into nice clean, warm and dry clothes and were presented with our Certificates.

Although the grueling parts were hell on earth the event was more than worth all the hardship, pain and food and the shooting.

It was fantastic to participate but one bit of advice - take the following week off for recovery!

For further information about the awards contact:
Mr. John Murphy, Chief Executive,
The President’s Award - Guinness Dublin Castle,
Dublin 2. Tel: 01-4758746
Email: p-award.net or Website: www.p-award.net
A BIG THANK YOU to all who entered Sherkin Island Marine Station’s Environmental Competition for Primary School Children in Munster 2004. We had a marvellous response to the competition and a wonderful day at the prize-giving ceremony at the Carrigaline Court Hotel, Carrigaline, Co. Cork, where Cllr. PJ Sheehan, Mayor of Cork County, presented the prizes.

We would like to take this opportunity to again thank our sponsors for this year. They were: BIM (Irish Sea Fisheries Board), Central Fisheries Board, City Print Cork, Cork City Council, Cork County Council, Denis McSweeny Photoshop, Cork, Dept. of the Environment, Heritage & Local Government, Evening Echo Newspaper Cork, Janssen Pharmaceutical Ltd. and Pfizer Ireland Pharmaceuticals.

Here is a very small selection of some of the 405 prize-winners.
I HAD great pleasure in presenting our Sherkin Island Marine Station Environmental Award for 2003 to Jim Wilson. Many of you have, over the last few years, heard his wonderful Cork accent on the radio programme *Mooney Goes Wild*. What comes across is his love and enthusiasm for birdwatching, especially so on the programme’s annual feature on the Dawn Chorus. Jim lives in Cobh, Co. Cork, with his wife Ann and two children. He has been interested in Irish wildlife since childhood. In fact he still has his first nature notebook, which dates back to 1972. His father was one of his great influences when it came to natural history, as well as Eamon de Butleir, Gerrit van Geldren, and the late Clive Hutchinson of Cork.

Jim has a particular interest in Ireland’s common wildlife, establishing Birdwatch Ireland’s Winter Garden Bird Survey in the early 1990’s. Over the years he has been a regular contributor to the wetland bird surveys co-ordinated by Birdwatch Ireland. He also wrote a book on birds and birdwatching in Ireland for beginners, illustrated by Don Comroy (*Bird Life in Ireland*, O’Brien Press 1994). In more recent years he has broadened his interest to all aspects of our natural history. He takes every opportunity to “spread the word”, giving talks and advice to schools and other groups wherever and whenever possible. He is volunteer manager of Cobb’s local Birdwatch Ireland Reserve at Cuskinny Marsh, and with the cooperation of the local landowners, teacher Willie MacSweeney and pupils of Scoil Issaol Naofa in Cobh, he has established a long-term study of nesting birds through talks and field trips. For the past 14 years the pupils have monitored songbirds nesting in nest boxes on the reserve as well as recording their observations on their regular visits to Cuskinny.

Jim believes that Irish wildlife is as interesting and exciting as anywhere in the world, something with which I totally agree. One of his most important aims has been to heighten people’s awareness of the incredible natural heritage we have here in Ireland and campaigning for its protection. He does this through his regular contributions to *Mooney Goes Wild* and the production of radio and TV specials, including the Dawn Chorus. He now spends most of his free time filming Ireland’s wild life and has had some of his work shown on RTE television. He believes there should be a network of state run nature reserves around the country, which would show off our natural heritage and provide a facility for schools, tourists and Irish people to go and see first hand our many natural treasures.

Jim compiled the *Cork County Bird Report* for four years. He was national chairman of Birdwatch Ireland, then the Irish Wildbird Conservancy for three years. He is currently a member of the scientific committee of Kilcolman National Nature Reserve in north Cork. Among other things he is currently working on an educational project for the Irish Whale and Dolphin Group.

In this day and age it is wonderful that there are people like Jim who are interested in creating a love of the outdoors for young people. Long may his efforts continue.

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