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Primroses (Primula vulgaris), one of the first flowers of spring.
Photograph: Paul Kay
LACK OF CIVIC PRIDE

EDITORIAL
By Matt Murphy

Much is written about the positive side of the Celtic Tiger but there is one very dramatic downside - the increasing amount of waste. A question that must be posed for all of us is “where can it be put?”. Attention is centred throughout the country on locating new landfill sites. Most of those being used at present are nearly full. Everywhere there is such a proposal for a new site, local communities have begun a campaign against the use of that possible site. However the reality is that there has to be a place for disposal.

There are pie-in-the-sky notions that we can recycle most of the waste we create. The fact of course is that we are at least 10-12 years away from even recycling 40% of what is presently going to landfill. However if we continue the present trends of producing more waste, we will be looking at recycling only 30%. There must be major changes in the collecting of waste and in our outlook to recycling. However the starting point must be with ourselves. We have to change our own habits first before pointing the finger at others.

The latter is the worrying issue. Our track record to date on recycling just two items - glass and aluminium cans is at around 17%. Both these figures are appalling as these two items are the easiest to collect for recycling. No one seems to question our lack of effort at a national level. We do lack civic pride. In the present controversy over landfill sites, it would be interesting to see if they have made people more aware of the need for recycling and environmental care as a whole.

The recycling figures for newspapers, cardboard, paper, tin cans and plastic are atrocious. Lack of market outlets is the reason given for the low figures. Surely it would be worthwhile to introduce subsidies for transporting these items to the recycling factories in and outside the country. The savings in space and other expenses at landfill sites would make economic sense. An example in Cork City: a printer weekly disposes, via a skip, around 2 tons of excellent quality paper to a local landfill - the cost is €200 or €10,000 annually. The estimated cost for disposal of printers’ waste paper for Cork City and County is in excess of €300 weekly - €250,000 per annum. Surely this must not be allowed continue?

Indeed, if one takes the discarded office paper and cardboard in the county, not being recycled, into consideration then one can only say we have lost the run of ourselves.

Local authorities must introduce major recycling initiatives for households and insist on segregation of materials. To achieve this a major educational programme is needed. This must be directed, in the main, at children. They have a far better understanding of why it is necessary to protect the environment. Children at primary school have a desire, that older generations have not, to see nature protected. It is they who are the true inheritors of the earth. It is in them that we must put our faith. They must be given the encouragement to force all of us - as only children know how - to clean up our act and to care for our environment. How many of us could resist a constant harping by the young to save our environment.

It must be said that local environmental groups win the odd battle but in the country as a whole the environment is losing the war. It is not too late for the present adults of this country to start caring. If each of us decided to do only one positive act for the environment on a weekly basis much could be achieved. Some examples are: recycle your bottles and aluminium cans; re-use envelopes; start a compost heap; use recycled paper; reduce the size of the first page of your fax message - most only carry name and address. Try one in your home, in your place of work, in your neighbourhood. Be able to tell your grandchildren you cared or else be prepared to tell them why you weren’t interested.

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We adults must realise that we are only caretakers of our environment. We will be passing it on to the next generation. We had made an unholly mess of waste disposal to date. Landfill sites (or lets put the true name on them - dumps) that are closed or are due to close, may create major problems for the future. No one knows what is draining into the nearby rivers, streams or groundwater. Local authorities have some re- sponsibility but we, the citizens who created the waste, have an equal responsibility.

What are also needed are national and local non-governmental organisations or groups to in-volve people of all ages in positive and practical work for the environment. Businesses must also take a lead, someone should have responsibility for waste control within companies, remember- ing this will bring financial savings. This has been proved very much in the United States. There is too much hypocrisy doing the rounds about landfill, incineration and transfer stations. Each is going to be needed in the future. Will the solution have to be a transfer of the decision-making process to government departments?

ATTITUDE AND ACTIONS
A National Survey on the Environment
Survey Highlights

As we go to press with “Sherkin Comment”, we have just received a copy of the Department of the Environment’s “Attitude and Actions - A National Survey on the Environment”. Here are the highlights of the survey:

There are specific areas where a clear improvement can be seen in Irish behaviour with regard to the environment over the last ten years - buying recycled paper, recycling cans, using a bottle bank, helping clean up waste and bringing back or re-using plastic shopping bags.

However, bearing in mind the expansion of “bring” facilities and the greater awareness of environmental issues, progress over the last ten years has been disappointing.

· Irish people have a public and private morality, thinking one way and behaving another when it comes to the environment.

· The Irish public want to see the Irish Government doing more, yet few of us are willing to make individual sacrifices. When it comes to protecting the environment, only 20% are willing to pay higher taxes, 18% willing to pay higher prices and 12% willing to make cuts in their standard of living.

· We are a nation concerned about rubbish and the appearance of our local areas, yet almost half of the population, 49%, admits to having littered.

· We are concerned about water quality and conservation. Yet only 39% of us are prepared to pay for water according to the amount we use. Water conservation only takes place where there is a personal gain for us, e.g. fixing a leaking tap or radiator.

· We admit that we have recycling “bring” banks and facilities convenient enough to use if we wanted to, yet only a minority is making the effort to recycling regularly. As regards the frequency with which we recycle, only 25% recycle glass, 18% recycle paper, 17% recycle cans and 10% recycle plastic on a regular basis.

· With regard to shopping behaviour, although labeling is acknowledged to be a source of information on the environment for us, only 42% ever pay attention to it when making purchases. Similarly, only 31% ever pay attention to the amount of packaging prior to purchase.

· We have made some progress, however, with 68% now buying recycled paper/tissue products, a figure significantly increased on ten years ago.

· Even when it comes to doing without our plastic bags while shopping, 60% of Irish people appear more willing to pay for new bags than to re-use old ones or use a reusable shopping bag. Some people have begun to use reusable shopping bags, though still not enough do so.

· It is in the area of energy conservation that most progress is evident. Recent energy efficiency campaigns and the economic benefits of conservation are having an impact on behaviour, with 87% switching off lights when leaving rooms, 83% turning down heating when out and 63% fitting energy saving lightbulbs.

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We need your support.
By Tim Cadogan

THOUGH current information and its global dissemination via the Internet and other technologies is the more valuable product in the stock market, there is a constant and growing interest in historical information. This is the raw material that fuels pastimes such as genealogy and local history, but which also is of interest to researchers in other fields of endeavor: botanists, zoologists, medical historians and meteorologists to name but a few.

The Irish experience of preserving records of the past has been far from impressive. The destruction of the Four Courts, the location of the Public Record Office of Ireland (P.R.O.I.), in the opening salvos of the Civil War in 1922, is the darkest in the story. Records dating back to the earliest centuries of English administration in Ireland disappeared in the conflagration. Perhaps the most dramatic loss in terms of broad interest was the 1851 census, but as that was destroyed in the 1922 conflagration there is less satisfactory source has been pressed into service as substitutes.

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The later nineteenth-century census records suffered a different fate. After the statistical data had been extracted from the census records for 1861, ’71, ’81 and ’91, they were destroyed. Had they been preserved, of course, the likelihood is that they would have suffered the same fate in 1922. Fortunately the 1901 census returns were not housed in the P.R.O.I. in 1922 and have been available to researchers for some years, as have the 1911 returns. Microfilm copies of these resources have been made and this has enabled their wider availability than at their paper-format home the National Archives at Bishop St. in Dublin.

One of the historical sources that was elevated in status as a substitute for the lost census returns is the Primary Valuation of Tenements, popularly known as Griffith’s Valuation. This mid-nineteenth century record of land holding gives the names of the occupiers of land and property for the whole country. These occupiers were tenants for the great part, not owners in fee and the valuation lists are often used as a genealogical tool, since the list of tenants to some extent represents a census of heads of households. The valuation records and the manuscript Field and House books in which were recorded the raw data used in studying land use and settlement patterns. The Primary Valuation records have benefited from modern technology in recent times and there are now two searchable versions of the Valuation available on CD-ROM. The Field and House books however are still only available in the National Archives.

Dating from the same approximate period is that great cartographic achievement, the Ordnance Survey 6" to the mile first edition maps, completed in the early 1840’s on the eve of the Great Famine. This is a source that regrettably is restricted as the maps are subject to deterioration through age and use. Hopefully, this wonderful resource will also benefit from technological advances and will become available to a wider audience in digitalized format in the future, though the fact that this would not be a commercially viable venture may not be to its advantage. The presentation of official historical sources such as the aforementioned is no more than one expects. As one moves down to records generated at other levels of administration and in business, the record of preservation is less impressive. Examples in the local administrative sphere are the electoral lists for the earlier decades of the twentieth century. While I am not conversant with the situation in other counties, no copy of the electoral lists for Co. Cork before the 1960’s was preserved in the county and such lists as are held by the National Archives are incomplete. At parish level, one of the useful records that has suffered through neglect are cemetery burial registers, a record that is often sought by those researching family history, but which has disappeared over the years in the case of many rural burial grounds.

Catholic parish registers of baptism and marriage have only in recent decades been considered in terms of preservation and the early registers had reached serious levels of decay before a more enlightened approach to preservation was observed. The most valuable historical records are often those that were created without any notion of their historical value. These include all varieties of business records, diaries and journals, correspondence and photographs. There are many collections in these categories preserved in archives and libraries, but their geographical variety and range is far from impressive. The general public has a key role to play here. Every family has its own collection of family memorabilia, every community its local long-serving business. Every effort should be made to preserve locally-generated documents of that type for the long-term benefit of the community.

It is only in the long-term that the value of collections of local material is appreciated, usually when they are only a memory. Do you know of a potential historical treasure trove of material? If you do, encourage its caretaker to take measures to preserve it for future historians, now!
Titanium

A Metal for the Modern Age

By M. A. Toole

DISCOVERED independently, in the 1790’s by W. Gregor in England and M. H. Klaproth in Germany, titanium was named by the latter after the children of Gaia, the earth goddess of Greek mythology. It was, for more than a century, thought to be a rare metal of little use. In fact it is the seventh most abundant metal in the earth’s crust, up to 100 times as plentiful as metals in everyday use, such as copper, zinc and nickel, and 400 times more common than lead. Its apparent rarity was largely due to the fact that isolation from its ores was difficult and there was very little demand for the metal. By the middle of the twentieth century, however, titanium proved to be a real prize among the elements when it was found to have several properties ideally suited to fulfilling many of the demands of modern technology. These provided the encouragement for chemists to develop methods for its commercial extraction, and its ores are now mined to the extent of 3 million tonnes each year, while 100 thousand tonnes of the metal itself are produced annually.

Small concentrations of titanium are widespread in rocks, and it is a common contaminant of ores of iron. The principle ore of titanium is rutile, which consists largely of the oxide of the metal. The powdered oxide formed by purification of rutile is the whitest material known, and is used as the standard against which other white substances are compared. Until fairly recently, the main pigment in white paint was lead carbonate. Unfortunately this is quite poisonous and tends to darken with age, mainly as a result of reaction with sulphur compounds from burning fuels. The extreme whiteness of titanium oxide, combined with its lack of toxicity mean that this compound has now almost completely replaced “white lead” in paints.

Extraction of the metal is both expensive and complex, to the extent that it is unlikely ever to replace iron in importance. The usual method of metal extraction, which involves heating the oxide ore with carbon, is inefficient for titanium, as the inevitable traces of carbon, oxygen and nitrogen in the metal quite markedly affect its properties, making it brittle and susceptible to corrosion. Instead, rutile is heated with carbon in a stream of chlorine gas to form liquid titanium chloride. This is then heated with sodium or magnesium metal in an atmosphere of the noble gas, argon, to produce pure titanium. The chlorine and the magnesium or sodium, being themselves relatively difficult to obtain, are recovered from the by-products and re-used, so that very little goes to waste.

The metal resists corrosion by many of the common acids and alkalis, because it is protected by a layer of oxide on the surface. If this layer is scratched, it rapidly re-forms, so renewing its protection.

In powdered form, titanium burns readily and is used to produce sparks in many fireworks. In one method for the manufacture of sodium hydroxide and chlorine, by electrolysis of salt solution, one of the electrodes is made of titanium coated with platinum. This is more efficient than the graphite previously employed in this and other similar processes.

The most important uses of the metal are related to its unique combination of valuable properties. Though its density is greater than that of aluminium, it is very much less than those of iron and copper. This lightness, combined with its strength and ability to withstand high temperatures make it virtually the designer material for the construction of aircraft parts, jet engines and space craft.

Almost by accident, new properties of titanium were discovered in the late 1950’s and early 1960’s, which suggested unique potential in the medical field.

When titanium is fixed into contact with bone for more than a few months, the bone grows into it, a process known as osseointegration. In experimental work, no adverse reactions have been observed from the body’s immune system, nor has the metal shown any evidence of even the slightest toxicity. Neither is it corroded by body acids. In consequence, titanium is now being seen as the ideal material for use in bone replacement and strengthening operations. The metal traditionally used for these purposes has been stainless steel, though this is rigid and does not flex well with bone. Steel does not bond with bone in the same way as titanium. Though pure titanium is too soft for use in hip joint replacement, it is easily strengthened by alloying with other metals. Traditional hip replacement therapy remains effective for around five years, on average. Titanium joints last very much longer.

Extensive use in dentistry and cleft palate repair has also been undertaken, many of the prostheses still performing their tasks after more than twenty years. From relative obscurity, and still hardly known by most people, titanium has, in little more than fifty years, become almost the magic answer to technological needs. As those technologies advance, the demands for this versatile metal of low density, high strength and zero toxicity will surely multiply.

If you couldn’t give a toss about litter, fine.

From now on, you’re going to pay. Commit an offence under the Litter Pollution Act 1997 and you could face a £50 on-the-spot fine or a maximum fine of £1,000 to your Local Council, along with costs.

It’s easy to make a difference.
the oil which lands on the beaches is so thick that dead birds are completely im-
mersed in it and are over-
looked. In other cases large
numbers of birds are found
by the general public and
local authority staff and are
not identified or counted. A
proportion of the affected
birds may come ashore along
the coast. Depending on tides,
currents, wind direction and
strength, significant numbers
of oiled birds may never
come ashore, dying at sea
and sinking. Indeed, in some
major spills the numbers rec-
corded on shore by the
conservation bodies may be
simply the “tip of the ice-
berg”. Anyway, the latest es-
timates for the French
incident are that up to
100,000 birds may have per-
ished, the great majority
(>75%) of which were
Guillemots. Many of these
are probably from Irish
breeding colonies because
we have already received
fourteen recoveries of
Guillemots ringed as chicks
on Great Saltee Island in Co.
Wexford. Guillemots are not
ringed at other major Irish
colonies (mainly because of
inaccessibility), so we do not
know how those individual
colonies may have been af-
fected. There were also sig-
nificant numbers of ringing
recoveries from colonies in
south Wales and west and
north Scotland, so the impact
is likely to have a wide geo-
graphical spread.

Guillemots were some of the birds affected by the recent oil spills in France.

Since the first full census of Guillemots in Britain and Ireland in 1969/70, most
colonies have shown
long-term upwards trends. In
Ireland, for example, Rathlin
Island’s population of
Guillemots has doubled to
90,000; Lambay Island’s has
gone from 42,000 to 60,000;
Cliffs of Moher’s from
12,000 to 20,000; Great
Saltee’s from 13,000 to
18,000. And this in spite of a
series of major oil spills
within the species’ range dur-
ing the same period. It seems
that the species, at a popula-
tion level, is very resilient
and is able to withstand not
only “normal” mortality lev-
els but also major events in-
volving the deaths of tens of
thousands of individuals. But
while this may give us some
grounds for optimism we
should not be too compla-
cent. The slow death by oil-
ing of 100,000 seabirds is a
shocking thing and conserva-
tionists and all other in-
volved parties should
continue to strive for the re-
duction of such oil spills as
far as humanly possible.

No doubt most readers of Sherkin Comment will be aware of the serious oil spill
off the west coast of France last December. The amount of oil spilled when the Total-
Fina oil tanker Eriska broke up and sank was not particu-
larly large (26,000 tonnes),
compared with the amounts
spilled when supertankers such
as the Torrey Canyon, Amoco
Cuddy and Braer foundered.
However, the impact on
seabirds from this latest acci-
dent may have been greater
than in these earlier events.

As is often the case with
major oil spills, Guillemots
and Razorbills seem to have
been the main victims, and in
the latest spill in France
Guillemots were particularly
badly hit. It is usually very
difficult to come up with an
accurate total for birds killed,
even if the conservation or-
organisations mobilise imme-
diately and organise coast
patrols covering all of the af-
fected area. In some cases
accessibl...
Madam Dragonfly
a scientific odyssey

Cynthia Evelyn Longfield (1896-1991)

By Monica Power

At the age of fourteen, exasperated by her lecturing governess, Cynthia Longfield turned to her mother and begged for relief. "I said to Mother - the absolute fooling history - the Corn Laws, or something?" Mother asked, "What do you want to learn?" Science. I said at once, Cynthia got her way and began a life in science that was to go on for nearly 80 years. She took her all around the world.

That life began on August 16th 1896. Cynthia Evelyn Longfield was the youngest of three girls born to Mountfort and Alice Longfield at Castle Mary, Cloyne, County Cork. The Longfields had been at Castle Mary since the end of the seventeenth century, first coming to Ireland during the turbulent period following the English Civil War.

The Longfields divided their time between a London house and the Cloyne estate. The young Cynthia preferred her months in Ireland, where she discovered her interest in nature, watching caterpillars develop and tadpoles hatch. Nothing in her history books seemed quite as alive as what went on outside the schoolroom. Lucky for her that her mother was well disposed and had also been curious as a child - she understood her daughter perfectly and provided her with science books. Cynthia, with her new hobby, often explored the woods around Cloyne, and both she and her grandfather would see her around. Her Grandfather Mason, though he died when she was seven, was another source of inspiration. On her visits to Eynharn Hall she recognised a like mind. "Natural history is my passion," she later wrote. "I was obviously born with an abnormally brain. I have always seen both sides of every scientific question."

Science was not her only interest, and she and her cousins joined the newly-formed Girl Guides in 1912. Cynthia loved the guides and would remain a member for many years. In 1920 during "The Troubles" Castle Mary was burned to the ground. Cynthia remained deeply affected by what she had seen and the family trust, which had provided for the upkeep of the grand old house, was depleted.

In 1929 she read her first published paper. Every so often she would leave Park House for conferences overseas. In 1967 she was invited to Egypt to a conference. "Every time the British Museum's resident entomologist went on an expedition to the tropics, particularly South America...

The British Museum's resident entomologist went on an expedition to the tropics, particularly South America. She was not confined to her home. When she was twenty-five she went with family to be buried there. A fine stone obelisk marks her grave. There she was born and there she was taught to love nature and the wildlife around her. She was brought up to understand the importance of nature and the need to protect it. She was taught about the beauty of nature and the need to appreciate it. She was taught about the importance of nature and the need to protect it. She was taught about the beauty of nature and the need to appreciate it.

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Drainpipes - the devil's darning needles

Horse-singers, snake-doctors, and the devil’s darning needles: they have been called many things in the past - but not very sympathetic - but we know them as drainpipes. There are about 5,000 species in the world today, grouped into 29 scientific families, but only 43 in Britain and Ireland. Their larval growth depends on warmth, so by far the greatest number is found in the tropics, particularly South America. Their larvae are an ancient group of insects and their present form has existed for over 200 million years, making them older than birds. They evolved during the middle of the Palaeozoic era, and the first great forests were getting down to form coal. The largest modern dragonfly is a waspwing of 18cm (7"), but massive fossil ones have been found with a wingspan of about 70cm (27").

Their characteristic shape is easily recognisable - a long body and two pairs of large glassy wings. The closely-related damselflies are smaller, with a more slender body, smaller eyes, and wings folded back along the body when at rest. Dragonflies are voracious predators that feed on other insects. They have powerful "toothed" mouthparts and they hunt by seeing through compound eyes or eyes, and wings folded back along the body when at rest. Dragonflies are voracious predators that feed on other insects. They have powerful "toothed" mouthparts and they hunt by seeing through compound eyes.
Paying for Oil Spills: The North Cape

By Michael Ludwig

January 19, 1996 is remembered at Coast Guard Station Point Judith. Winds were gusting to 55 knots, seas were 20 to 24 feet and the “Mayday” call from the tugboat Scandia was received. Fire had broken out in the engine room of the 111-foot tugboat. Before the day was over, the Scandia and her 340-foot, barge, North Cape, came ashore at Moonstone Beach in southwest Rhode Island, USA. Moonstone Beach is in the Ninigret National Wildlife Refuge. The North Cape held 4 million gallons of Number 2 or “home heating” oil. Although a cleanup was undertaken, more than 828,000 gallons of oil were spilled. (Number 2 heating oil is toxic to marine life but, evaporates if conditions are right.) In the days that followed the grounding, it proved its lethal reputation on the fishery resources of Rhode Island. Persistent storms and cold weather hampered the cleanup and limited evaporation.

On December 22, 1999, the final penalties for the North Cape spill were announced. The owners and insurers of the tugboat and barge will pay approximately $53.5 million for all the environmental damage and cleanup. $18 million will go to resource compensation and restoration in Rhode Island. Earlier in the week, the responsible parties settled the damage claims from 110 lobstermen. The lobstermen will share $10 million.

How is it possible that $28 million are being paid for losses of natural resources associated with an oil spill? Simple, in the wake of major shipping accidents in the 1970s and 1980s, particularly the tankers Amoco Cadiz, World Prodigy, Exxon Valdez, and Argo Merchant, the United States Government recognized that not all oil spills are caused by acts of God or war. In 1990, in recognition of the environmental “costs” associated with spills, the “Oil Pollution Act” (OPA) was passed. Several laws spell out what should be done in preparation for oil spills, who does what at an oil spill, as well as how impacts are determined. OPA defines how natural resource assessments are assessed. The money is used for natural resource restoration. The individual States and Federal Government are “Trustees of the Public’s Natural Resources.” They protect and manage public trust resources for Americans.

Noaa is a Trustee:

The North Cape spill was a difficult problem, made worse by bad weather. People doing cleanups joke that spills only occur on weekends, at night and in bad weather. There is some truth to that joke. Accidents happen more often when people have a lowered sense of caution. The Exxon Valdez ran aground when the guy steering the vessel didn’t stop turning after changing lanes on the shipping highway through Prince William Sound. He drove off the road and onto Bligh Reef! After the Amoco Cadiz lost power, the captain and crew of the Argo Merchant had map problems. They ran aground because they were lost. Not all spills are someone’s fault but caution goes a long way toward avoiding accidents. Was the weather too bad to be moving the North Cape?

In the days following the grounding of the North Cape, more than 75 percent of the oil was removed from the barge. However, storms were regularly sweeping through the area and shoreline resource assessments were difficult. Tracking the spill was made difficult because aircraft couldn’t fly and ships couldn’t sail. Satellite views were handicapped by cloud cover. Although backwater areas were fitted with oil exclusion booms, the weather, volume of oil released and shoreline accessibility conspired to negate the effectiveness. Oil moved under and splashed over the boom. Because coastal ponds were ice covered, assessment and evaporation were restricted. Impacts that should have lasted days extended into weeks. Only after the ice melted was the situation appreciated. Offshore, the storm threatened south startled the oil downward. Setting on and in the seafloor, millions of lobsters and clams were unable to escape the toxins. Only after dead marine organisms began washing ashore were the dimensions of the offshore impact realized. Dead lobsters, clams and fish washed ashore forming windows over a foot high in some places. The money the state and Federal Governments received will have their impediments to fish movement.

The owners and insurers of the tugboat and barge will pay approximately $53.5 million dollars for all the environmental damage and cleanup.

The location of the oil spill in southwest Rhode Island, USA.
The decaying carcasses release nutrients back into the river and the surrounding for- est. When a bear pulls a salmon from the river and leaves the partially eaten body under a cedar tree, the fish fer- tilizes the cedar, which in turn shades the stream and keeps it cool for future salmon. The gift was the economy of the native northwesterners who were fun- damentally in harmony with na- ture’s own economy. When the Northwest Indians domi- nated the area they had their own way of conservation - they knew when sufficient salmon were taken from a river each season. He points out that “In- dians had for thousands of years used the natural re- sources of the forest, plains and rivers and knew that they had to practice preservation to sur- vive.”

He writes of the first Euro- Americans who arrived in the Northwest and how their indus- trial economy set the co-exis- tence with salmon, not only at the brink of extinction. Instead, salmon. Now I see more than a new set of rules. But the salmon’s problem is - at its root - a clash of two economies: the industrial and the natural. The gift economy the Indians evolved was a sus- tainable balance with the nat- ural economy. The industrial economy could not afford such a balance. Eventually the in- dustrial economy will also have to evolve a balanced relation- ship with the natural economy of the Pacific Northwest. As the dust bowl that ravaged the Great Plains in the 1930s clearly illustrated, there is a heavy price to pay if the needs of the ecosystems are ignored too long. To remain productive, the industrial economy of the Northwest will have to back away from a conflict with the salmon and the geological history of the salmon and the ecological history of the Pacific Northwest changed what I see when I look at a salmon. Now I see more than a silver fish sitting at the center of a regional crisis. How I read when I look at a salmon today, I am reminded of the region’s long history.”

We learn that archaeological research shows that 6,000 years ago British Columbian salmon made up 80% of the diet of a coastal settlement in Namu, B.C. He describes salmon as a gift to the whole ecosystem. “The salmon’s gift benefits the whole ecosystem, including at least twenty-two species of mammals and birds that feed on salmon flesh, such as bears, eagles, and even little winter terns. The decaying carcasses release nutrients back into the river and the surrounding for- est. When a bear pulls a salmon from the river and leaves the partially eaten body under a cedar tree, the fish fer- tilizes the cedar, which in turn shades the stream and keeps it cool for future salmon. The gift was the economy of the native northwesterners who were fun- damentally in harmony with na- ture’s own economy.”

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Conference on Local authority statutory environmental performance

A CONFERENCE to review the development of a management system to assess the performance by local authorities of their environmental protection functions, was held in Galway recently. The system developed by the EPA was officially opened by Mr. Noel Dempsey, T.D., Minister for the Environment & Local Government.

Speakers at the conference included those involved in the development of the system, members of the steering committee, representatives of the EPA, the pilot local authorities and persons in overseas local authorities who have implemented EMAS and ISO 14001 systems.

Management System

In 1998, the EPA commenced development of an environmental management system to assist local authorities to discharge their environmental functions. The system divides the environmental protection responsibilities into seven sectors: waste, air, noise, planning, water quality, wastewater and miscellaneous (see Figure 1).

A contract to develop the system (divided into four phases) was awarded in 1998 to E.G. Pettit & Co. of Cork. The project is categorised into common themes such as Monitoring, Inspection, Registers, Planning etc. (see Figure 2).

Future plans for Management system.

The EPA intend to further develop the system on a full scale demonstration basis with the three pilot local authorities during 2000 and thereafter to introduce the system to all local authorities by 2002. It is intended that training on the use of the system will be provided to all local authority personnel involved in managing the system.

Regular up-dates of the system and the development of a Web page are planned during the roll out period.

By the end of 2002, the EPA anticipate that the system will be in place in all local authorities. This will enable the EPA to prepare a national report on the implementation of environmental protection functions by local authorities during 2003.

Table 1: Project outline and progress to-date

| PHASE 1  | Scoping of the system | completed in 1998 |
| PHASE 2  | Development and preliminary testing of the paper based system | completed in 1998 |
| PHASE 3  | Piloting in local authorities | Pilots in Cork, Cavan & Galway County Councils, Feb 1999 - 2000 |
| PHASE 4  | Digitising of system | Commenced Jan. 1998, expected completion date, Feb. 2000 |

PHASE 4: Digitising of system

PHASE 3: Piloting in local authorities

PHASE 2: Development and preliminary testing of the paper based system

PHASE 1: Scoping of the system
Even in the modern world, wild fruits remain a popular free snack. Many of us have gathered bilberries, wild raspberries or wild strawberries, or have perhaps made sloe gin or elderberry wine. Blackberry pies remain a staple of late summer. However, few of us these days collect or eat wild vegetables. If we want greens we buy them from the supermarket, greengrocer or village shop. Few of us eat wild greens or herbs.

Yet throughout southern Europe, in the countries that border the Mediterranean Sea, wild greens remain an important food in late winter and spring. Much of the Mediterranean region is hot and dry in summer, but from late autumn to spring the landscape is green, moist and mild. Conditions for plant growth are ideal. This plant-rich region – with over 25,000 species in all – holds a great diversity of wild cabbages, cresses and rockets (Cabbage and cress family or Cruciferae) and chicories, dandelions and related plants (Dandelion and daisy family or Compositae). Traditionally the leafy winter growth provided local people with much-needed flavouring, vitamins and roughage in a season of scarcity. They were particularly popular during Lent, when both the Catholic and Orthodox churches maintained strict fasts.

These wild greens are still popular today. As well as leaf greens, the people collect, sell or eat wild asparagus shoots, grape-hyacinth bulbs, and fennel and leeks for flavouring. Later in the season they gather marjoram or oregano and the other richly scented and flavoured kitchen herbs that grow wild among the scrub on the region’s rocky hillsides. In springtime on the large Greek island of Crete, for example, no self-respecting housewife or family group is seen out in the country without a rapidly filling polybag of snails – an ancient source of protein – and various wild greens. The greens, known as horta, will be eaten raw as a slightly bitter salad or cooked and eaten like spinach, dressed with olive oil and lemon juice. The wild but dignified mountainous men of Crete, with their fierce moustaches and long leather boots, eat these green salads and tiny semi-wild olives as a snack to accompany glasses of raki, a fiery spirit (not unlike poteen) that is a traditional part of island life.

This extensive wild harvest seems to be sustainable. It does no harm, and enough plants are left to set seed. Nevertheless, some conservationists are a little bit concerned at high prices being paid for wild greens and an apparent increase in harvesting. Gatherers often take the root as well as the leaf rosettes. A revival of interest in traditional foods, similar to what we have seen in recent years in Ireland and Britain, may be partly responsible. On balance, it is admirable that local people have kept in touch with their ancient culture and are using everyday, widespread plants. This may well encourage a greater interest in plants and nature conservation generally.

Not only are these plants important wild foods, but also they are often the relatives or ancestors of modern crop and garden plants. Some were brought into cultivation over the centuries; some stayed semi-wild, others were bred on for growth and flavour. And here lies a curious link with Ireland, for several Mediterranean ‘weeds’ lurk around old ruins, especially in the west. During the 1980s-1990s, when we were compiling the Flora of Sherkin Island, my young colleagues and myself were particularly struck by a group of plants, originally introduced from southern Europe, on and about ancient buildings in the islands of West Cork.

One of the most interesting is the flat-leaved Wild Parsley (Petroselinum crispum), with umbrella-like clusters of yellowish flowers, that persists abundantly on the walls of the Castle bawn at the eastern end of Sherkin. It was recorded here in the 1890s by Cork botanist R.A. Phillips and by British botanist Oleg Polunin in the late 1940s.
Watching as a hobby. The great talent of a man who is a craftsman with his camera. Mills, who is recognised as one of Europe’s finest natural history photographers. They will show Ireland’s Bird Life. A World of Beauty
Edited by Matt Murphy & Susan Murphy
Ireland’s Bird Life - A World of Beauty contains photographs from the vast collection of Richard Mills, who is recognised as one of Europe’s finest natural history photographers. They will show the great talent of a man who is a craftsman with his camera. This book is not for the expert birdwatcher or photographer and is by no means a complete resource— the sea.

Ireland’s Marine Life. A World of Beauty
Edited by Matt Murphy & Susan Murphy
Millions of photographs and billions of words have been printed on Ireland’s landscape, her plant life and her inland waters, yet the magnificence of the marine life around her coast equals, if not surpasses, that terrestrial beauty. The photographs chosen give but a glimpse of the thousands of animals and plants in Ireland’s coastal waters. We hope that they will give people a new awareness of Ireland’s wonderful natural resource— the sea.

Signal at Red for Diesel Leak
RAILTRAK plc and Silverlink Train Services Ltd in the UK have been fined a total of £250,000 for polluting groundwater with over 200,000 litres of diesel. The Environment Agency in the UK says that although the companies knew that fuel was being lost from a pipeline, they both showed a “total disregard for the environment” by continuing to use it on a daily basis. RAILTRAK and Silverlink admitted the pollution. Railtrack owns the sidings and the Train Maintenance Depot at Bletchley, Milton Keynes.

Workman hurt in bin lorry aerosol blast
A WORKMAN was left shocked and suffering from smoke inhalation when aerosols exploded as he loaded a bin van.
The man was knocked back into a wall by the explosion, which engulfed the rear of the lorry in flames. Details of the incident were given at Brighton and Hove Magistrates’ in the UK when Cable and Wireless Ltd admitted a duty of care offence. It was fined £2,000 with £408 costs.

The Wild Plants of Sherkin, Cape Clear and adjacent Islands of West Cork
Edited by John Akeroyd
This illustrated publication brings together 20 years of floristic data from the islands of Roaringwater Bay, S.W. Cork. Ireland. A total of 592 flowering plants, conifers and ferns have been recorded on these islands. This makes this small area the richest 10-kilometre square in Ireland. Twelve Irish Red Data book species, over 30 significantly rare Irish plants and several taxa new to the Irish flora have been recorded. This is the first Flora for any part of County Cork, the largest county in Ireland, since T. Allin’s Flora of the County Cork, over 100 years ago in 1883.

For further publications visit our website: http://homepage.eircom.net/~sherkimarine/
BirdWatch Ireland In Action
Ireland’s Largest Conservation Organisation

BirdWatch Ireland is Ireland’s largest conservation organisation with over six thousand members. The organisation was formed over thirty years ago following the amalgamation of three independent bodies. Back then, the pressing need was to conserve the White-fronted Goose on the Wexford sloeblands, and land was duly purchased to create a reserve. In many ways although the Ireland of the 21st century has changed dramatically, the challenge to protect our birds and their habitats remains.

Wildlife and Habitat Protection
After more than ten years of BWI lobbying for new legislation to protect wildlife and natural habitats, results were finally produced in June 1999 when the Heritage Minister, Ms Síle de Valera TD, published the Wildlife (Amendment) Bill 1999. Regrettably, the subsequent progress towards enactment of the Bill has been very slow. At the time of writing, the Bill is still at the Second Stage (general debate) in the Dáil, with the more detailed Committee Stage still to come and then the whole process is repeated in the Seanad. The new Wildlife Act is to provide legal protection for Natural Heritage Areas and to enhance Ireland’s compliance with the EU Birds and Habitats Directives and with other international agreements and conventions.

Progress was made during 1999 in rectifying the chronic shortage of field staff in Dúchas National Parks & Wildlife. Gaps in regional coverage have been filled by the appointment of some 30 new Conservation Rangers, who have a key role in the effective implementation of wildlife and habitat protection laws.

The designation process for Special Areas of Conservation (SACs) under the EU Habitats Directive, has advanced considerably during the year, though the EU Commission still urges the Irish Government to do better. Fairly explicit EU warnings that shortcomings on SAC/Natura 2000 designations could jeopardise the flow of the multi-billion-euro Structural Funds to Ireland will undoubtedly have an effect. An SAC Appeals Advisory Board, with representation from the farming organisations and conservation NGOs, was established in 1999 to advise the Heritage Minister on appeals by landowners objecting to the inclusion of their land in SACs. This was in response to a BWI proposal two years previously for a mechanism to expedite the SAC designation process.

Agri-environment and Structural Policy

BW1 has played an active role in the work of BirdLife International in securing some (though not yet enough) reform of harmful aspects of EU agricultural schemes and payments in the “Agenda 2000” negotiations which concluded in 1999. Through our input to the BirdLife Agriculture Taskforce and through our direct liaison with the EU Commission, BW1 will now maintain pressure for further CAP reform in the course of the World Trade Organisation international trade negotiations.

At national level, BW1 has thoroughly examined the Planning and Development Bill 1999, (which consolidates all previous planning legislation into one Act), and has lobbied actively for amendments to the Bill so as to safeguard sites and habitats of conservation value against harmful development works.

Research and Surveys

The Countryside Bird Survey (a survey partnership comprising Duchas, The Heritage Council, BW1 and with sponsorship from ESB), monitors the health of our “common” birds and has made steady progress again during its second season’s fieldwork in 1999. While two years’ data is not enough to measure species populations trends, the close correlation between the “league tables” for the top 30 species for those two years, is in itself a positive indication of observer consistency and of the basic soundness of the survey methodology.

BirdWatch Ireland is the principal Irish partner of the part EU INTERREG funded Seabird 2000 survey, the third complete census of British and Irish seabird colonies.

• 1999 was the first of a 3 year programme and effort was concentrated on the largest colonies of international importance.
• Large cliff colonies, including Lambay (Dublin), Cliffs of Moher (Clare), Clare Island (Mayo) and Horn Head (Donegal) were counted by volunteers, BW1 and Duchas staff.
• So far there is evidence of considerable increases in populations of Fulmar, Kittiwake, Guillemot and Razorbill but Shags and the large gulls (Herring, Great and Lesser Black-backed Gulls appear to have declined.
• To date over half the coast has been covered for Black Guillemots: the population has apparently quadrupled to ca. 21,655 birds, but this is thought to be due to better methodology and a more focused approach rather than a significant population increase.

BirdWatch is for People too

Apart from the activity in survey and research, BW1 is also about people. BirdWatch Ireland Branch Volunteers organised a total of 369 events nationwide on behalf of the organisation in 1999. Over 2,000 visitors took part in BirdWatch Ireland’s National Open Day ‘Discovering Birds at Bull Island’ in November 1999. The National Dawn Chorus Day (now in its fourth year) was well supported by our branches with 21 events being organised throughout the country. Despite the early start (from 4am) attendance is generally excellent. The National Down Choo Day is now a farm fixture on BirdWatch Ireland’s national calendar of events, watch out for this year’s event on Sunday 14th May.

In 1999 BW1 successfully obtained project funding and awards from the following: All Better Ireland Awards, Duchas, ESB, ESPO, Heritage Council; National Millennium Awards: No wonder it was the busiest year in our history. Nearly 400,000 was spent on conservation projects alone. With 14 fulltime staff, effectively doubled by a minimum of 27,000 volunteer hours contributed annually by our members, we are ready and willing to take on the challenges of the 21st century.

BirdWatch Ireland has three new web sites and an easy to remember web address. The sites feature: BirdWatch Ireland, Migration: changing with the season; Working With Birds - around your school.

In the 1999 complete census of Irish and British seabird colonies, there is evidence of considerable increases in populations of Kittiwake (above), Fulmar, Guillemot and Razorbill.

Birdwatching is fun: members of the west kerry branch enjoy a day in the field

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Although some of New England's offshore groundfish stocks have turned the corner and are beginning to rebuild, most remain at or near historically low levels through severe overfishing. Regardless of the sequentially added severe control checks finally imposed by the New England Fisheries Council to reduce fishing effort, it was much too late to prevent hardship to both the fleet and communities along the coast. Further reductions in allowable catch are required for many species to sustain the fishery management plan will surely lead to vessel foreclosures, since the ability to make mortgage payments will become difficult for many vessel owners. In fact, this has already become a reality for some. How could such a significant failure have happened in an industry almost four centuries old?

It is important to me to review the arguments made by industry representatives over the years regarding why severe stock depletions occurred in New England. One argument proposed that the concept of overfishing was an afterthought by Congress and was to apply only to foreign fishing vessels. As a result, many argued that selected stocks were not overfished, and even went so far as to bring suit against the government in an effort to reverse increasingly stringent management measures. Fortunately, such attempts failed or circumstances would be worse.

Many argued that decreased landings resulted from a lack of adequate law enforcement. This interesting position invariably blames the "other," unmanned fisheries—those apparently never present when the point is made. It would require cheating on such a massive scale to so severely overfish New England's groundfish stocks that the argument represents a shameful level of self-incrimination for the industry. When law enforcement had been targeted, overt, effective and widespread, fishing industry representatives more often than not claimed they were being singled out and harassed. Even if law enforcement efforts were completely effective, and fishermen operated in strict compliance with regulations, the number of vessels seeking a dwindling resource is too great to relieve the crisis. The culprit is overcapitalization. too many vessels seeking too few fish.

Another argument—that the decline in New England groundfish stocks is due to pollution, shore-line development or habitat destruction—has also been put forth forcefully and frequently. While there may be merit to this argument for some species that inhabit rivers, estuaries and coastal waters, there is no evidence of which I am aware that links any of these factors to declining stocks of groundfish in traditional shore areas such as George's Bank.

It has been suggested that declining stocks were caused by environmental factors, such as changing weather patterns, water currents, water temperatures and the like. If these explanations are correct, it is quite interesting that the factors seem to affect only those species for which there are markets. Offshore stocks of Atlantic herring and Atlantic mackerel are thriving. Former trash fish species, such as dog fish and monk fish, which were virtually unavailing in fishermen's nets and were in great abundance, were fished so hard after markets were developed that they, too, require restrictive management. Therefore, the influence of environmental factors, which we are asked to believe are somehow synchronized to consumer tastes, clearly cannot have caused the selective near demise of New England's groundfish resources.

It has been suggested that discards of undersized fish and their subsequent decomposition so fouled water quality offshore that fish stocks were adversely impacted. Therefore, the Federal government is blamed for imposing regulations that prohibit landings of undersized fish. While I believe this idea is clearly without merit, it, too, fails to explain why only species for which a market exists are in a state of decline.

Finally, it has been suggested that overcapitalization and resulting overfishing has been caused by Federal government programs. In essence, the argument rests on the idea that since the government encouraged Americanization, i.e., domestic vessels replace foreign fleets, this led to current excessive harvesting capacity. Consider, however, that virtually every management recommendation made by the government to the industry had been designated as emanating from the "ivory tower." Yet we are now asked to believe that since the government urged industries to build new vessels to be built or existing vessels be modernized, all of a sudden everyone leaped onto the band wagon. Nonsense! Even the most magnificently designed Guaranteed Loan Program became available for roughly only 3% of the groundfish vessels, and each represented "high liners." Just where did the other 97% of the groundfish fleet come from?

What is the truth? My humble opinion is that a finite resource on which is imposed an excessive harvesting capacity in the absence of meaningful controls must and will fail, which is what has taken place in New England. It is virtually impossible to achieve perfectly effective law enforcement. And pollution, even if a factor in declining offshore stocks, will not be eliminated in the near term. Environmental influences are beyond the control of mere humans. Thus, there is but one factor—fishing effort—that can be controlled.

To my knowledge, commercial fishing represents the only industry in the U.S. for which the tax base is free. Furthermore, fish and shellfish resources within the U.S. EEZ belong to the public, yet the public receives no economic return for its investment of tens of dollars for research, management, administration and law enforcement. All other public resources are either purchased outright, leased, or paid for in other ways by users, whether or not one can argue that the tax-paying public receives a fair market value for those resources. Included in the list are timber harvesting, grazing rights, and natural gas and petroleum extraction from either public lands or the continental shelf. Free enterprise, I believe, implies a clear responsibility to pay for a market value for raw materials, goods and services, as well as to protect the public's interest in the process. These considerations are not evident when applied to the commercial fishing industry or many recreational fisheries, nor are they likely to be unless prevailing attitudes change. Fortunately, more and more fishermen, who formerly attempted to compete in the irrational open-access arena, had second thoughts; there is growing support for considering new management approaches.

The law requires that fishery management plans be based on the best scientific information available. Since stock assessments always will be characterized by a degree of uncertainty, as with any attempt to "measure" living natural resource processes, the science supporting management efforts is often in question. Of course, we do need better data. Better data would help to thwart those arguments that revolve consistently around the question of science, and that allow political interference to influence and dampen the effectiveness of management, administration and law enforcement. Unfortunately, there has never been adequate economic and human resource available for a sustained monitoring program for some sectors of our groundfish fishery, and the National Research Council (NRC) has already recommended that a better data base be developed. However, the NRC has also stated that what data are available are good enough and reflect acceptable precision. Certainly, scientific data have been more than adequate from which to predict the consequences currently plaguing New England's fleet and the groundfish resources on which it depends.

This brings us to the dilemma of the concept of Optimum Yield, with which we must deal under current law. Nor does the problem apply only to New England, since all eight fisheries in the U.S. Councils are attempting to deal with overcapitalization, depressed prices, and the politics of free enterprise in a democratic country. However, a legally mandated concept, which is the basis for all fishery management plans, must be restructured and understood. What is the dilemma facing fishery management in the U.S. today. The dilemma, then, is a double-barrel question—how to rebuild and manage overfished stocks and prevent overfishing without a politically unacceptable impact on the fishing industry? By this point, the reader will wonder if the apparent contradiction can be resolved, given the "rules of the game" and assuming there is merit to my interpretation of events. In fact, when I contemplate the critical decline in New England groundfish stocks and the extent of overcapitalization, I, too, am forced to question the wisdom of OY as a management imperative. In essence, however, it is the concept of OY that seems to be the problem. Even the fishing community is at a loss to derive a solution. Instead, due to excessive harvesting capacity coupled with a continuing decline in traditional species, various industry components are in conflict with each other. Fixed- gear fishermen blame mobile-gear fishermen; small-vessel operators blame large vessels; inshore fishermen blame offshore fishermen, due to catch, directed fisheries for one species are blamed for the decline of species that are targeted in directed fisheries for other species; some states blame other states; the recreational and environmental communities are inclined to blame the commercial sector; and everyone blames the Federal government. Such circumstances will hardly give rise to effective fishery management. 

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Having your cake and eating it

By Victor Buckley

THE Irish landscape is like a birthday cake, made up of the many layers of history and prehistory that has made Ireland what it is today. The current boom in development, known as 'the Celtic Tiger', is seen by many as the icing on that cake - inviting, attractive and leaving us with a taste for more. However development can be destructive - can we have our cake and eat it too? Or will the Celtic Tiger having eaten leave us only crumbs of our heritage?

Heritage - Why Bother?

Remembering our past is very important, as Joseph Joubert wrote in the 17th century "We must respect the past, and mistrust the present if we are to safeguard the future." Modern Ireland has nurtured this respect for its heritage, with culture and politics intertwined to create a national pride and sense of identity for the fledgling state. In 1930 the first National Monuments Act laid the foundations for what is today one of the strongest and most protective legislation governing archaeology anywhere in the world. But why bother? The answer is that the archaeological legacy of this country is a non-renewable asset. Unlike our natural heritage we are dealing with monuments which in every case are unique in the story that they have to yield. Whereas if one natural habitat is destroyed it will not mean the extinction of an entire species, in the case of a monument it will be destroyed forever. However we need new development and these developments need not be seen to be ripping through our cultural inheritance. The duty of preserving our past lies with the State Agencies, Local Authorities and Community Groups on archaeological development. Archaeology and Development can co-exist.

Balancing the Tiger

There are some 120,000 known monuments scattered across the Irish landscape and many previously unknown sites being discovered on a daily basis. These new sites are either being found by archaeological survey, aerial reconnaissance or by diligent landowners, though many are discovered during the course of new development. The 1980's a Sites and Monuments Record was created by Dúchas consisting of Constraint Maps pinpointing all the known archaeological sites at that time. These aided planning officers and developers by drawing to their attention potential archaeological problems. This was an attempt to avert the needless destruction of the archaeology through simple ignorance of the nature of a site. Since 1994 the National Monuments (Amendment) Act has deemed the sites noted on the constraint maps to be Recorded Monuments. These sites have a level of protection which requires two months written notification prior to any development that will affect them. Developments within architecturally sensitive areas are referred to Dúchas for comment as part of the planning process and other agencies such as the Forestry Service seek recommendations in advance of afforestation. However when a site is referred to us it does not mean that it is automatically refused permission. There are many different ways in which the archaeology can be protected. Of the 5,000 planning applications and 1,000 forestry or graveyard restoration schemes dealt with by Dúchas in 1999 relatively few were turned down. In some cases redesign methods were suggested that minimised the impact on archaeology. Alternatively monitoring of groundworks or pre-development testing determined the level of archaeology present. In quite a number of cases this has proved to be financially beneficial to the developers as they have shown the existence of previously unknown deposits which would have involved costly mitigation. Their discovery allowed a redesign of development which actually saved money in the long-term. Rather than halting the development outright, most of the time Dúchas recommends that the site be excavated. This is termed 'preservation by record' and means that development can be permitted once the archaeology has been fully recorded and the site sterilised. This can be a costly business but when weighed against the overall cost of development it is not as onerous as it would seem. An estimated cost for the work supplied by the clients' archaeologist in advance will allow the developer to weigh up their options and to decide on which approach to take - redesign, excavate or not proceed. In the case of large developments the key words are AD-

Quarrying can leave archaeology high and dry. One of the remaining tombs, in Carrowmore, Co. Sligo, of what is the largest pre-hisotric cemetery in Europe.

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The Sharks of Beveridge Reef

By Pete Atkinson

LOST in the immensity of the Pacific Ocean between the Cook Islands and Tonga lies a tiny ring of coral enclosing a shallow lagoon. No trees, no islands, no land at all. Just ocean and coral beneath the endless sky.

On the leeward side, the ring is breached by a single wide pass where grey reef sharks laze in the current. The centre of the atoll lagoon is 15m deep studded with small coral heads. Ringing the deeper water and extending to the back-reef margin inside the reef itself lies a shallow sand flat of old bottle turquoisewhich sunlit is broken into shards of David Hockney spangles.

Though the tidal range here is small, at high water a choppocrosses the lagoon from the ocean swell outside. But at low water it lies like a mirror in the crystal water it felt like an aquarium.

We slipped over the side for a look round a coral head on the edge of the reef. There were knife fish slicing through shoals of fish and mackerel. We saw no sharks then.

At dawn, I took the dinghy against the light to the reef. The low tide revealed the debris from a more ancient wreck: hawse pipes, anchors and skeletal remains of chain. There were scattered iron-rich ballast stones now stuck to the reef by calcareous algae. Strangely, in the shallow pools around the wreck there were thousands of the tiny bubble shell ophioplilans Haminula symbiotic feeding on filamentous algae. Strange, because a few paces away from the wreck, there were none. How they resist the high water turmoil I have no idea. Other animals are better protected. Cemented to the calcareous red algal cap of the reef top were tubes of Dendrogyra maxima vermeines. These gastropods molluscs cast mucous nets like cobwebs which collect passing plankton and detritus. The net is periodically gathered by the radula, consumed, and a new one secreted. At low water the tube opening is protected by a horned brown operculum.

On the seaward edge, the reef is etched into ravines and gulleys covered by stunted corals and encrusting red algae. The hard reef top is formed into shallow terraces like rice paddies. In the confined pools there are black sponges, heavily shellotted gastropods, bennies and occasionally an octopus.

On that first morning I prepared for a dive at the pass. On my way to the two nautical miles across the lagoon I saw a huge creature; it took me a moment to realise it was an adult humpback whale with her calf inside the lagoon in about 15m of water. They were feeding about at the surface, siphoning and lobtailing. The calf made a couple of half-hearted breaches. After I had watched the whales for an hour they slipped out the pass. Where the current was strongest, I had a look over my shoulder and saw schools of trevally and many grey reef sharks. Trolling a plastic squid I caught a couple of half-hearted breaches. After I had watched the whales for an hour they slipped out the pass. Where the current was strongest, I had a look over my shoulder and saw schools of trevally and many grey reef sharks. Trolling a plastic squid I caught a couple of half-hearted breaches. After I had watched the whales for an hour they slipped out the pass. Where the current was strongest, I had a look over my shoulder and saw schools of trevally and many grey reef sharks. Trolling a plastic squid I caught a couple of half-hearted breaches. After I had watched the whales for an hour they slipped out the pass. Where the current was strongest, I had a look over my shoulder and saw schools of trevally and many grey reef sharks. Trolling a plastic squid I caught a couple of half-hearted breaches. After I had watched the whales for an hour they slipped out the pass. Where the current was strongest, I had a look over my shoulder and saw schools of trevally and many grey reef sharks.

Over subsequent days still more sharks arrived from other parts of the lagoon until eight or nine were attracted by any food which was offered. One of these was a tiny heady tip reef shark, the rest grey reef sharks. The adult females were almost two metres long and dominated any feeding, seldom allowing the smaller sharks to feed.

The sharks were stimulated by smell, or by the sounds of other fish feeding and beholding in a manner reminiscent of exceptionally well-behaved dogs. They swam up the smell corridor and the sound of odour, and rummaged around until they found the food. Unlike white tips which rely heavily on smell, the grey sharks could see a piece of fish adrift in the water quite well and would come very close to me if I offered nothing else. White tips would pause close to food many times, only realising they had missed it when the smell diminished. If the food was hidden in the reef, the white tips were more adept at locating it and sticking their noses into the reef to retrieve it than the grey reef sharks.

Few good photographs of sharks are taken under unaided conditions. Most reef sharks are shy and after an initial close pass will stay away from divers. Feeding fish alters their normal behaviour. If this is in some way damaging to sharks, this should be weighed against the positive public relations value of pictures of these magnificent animals. Large numbers of sharks are killed annually and they need all the help they can get. Placing divers in the middle of a feeding frenzy is an unfor-tifiable experience. Some shark species are the ambassadord for sharks in the same way that being in the water with a whale focusses the mind to their plight. Shark feeds give sharks an economic value far above the value of their fins. When feeding sharks were banned in the Maldives, fishermen came and cleaned them out. The locals didn’t care since they no longer had an economic value alive. I think that feeding grey reef sharks is reasonably safe. Not all these sharks are conditioned and they behave well; however I would not want to spear a fish while grey reef sharks are being fed. The closest possible is on Niue, 125 miles away, so any kind of bite would be a disaster at a place like Beveridge Reef. The only thing they were inclined to bite were the flashguns; either because of the camera noise or the associated elec-trical field.

Outside the lagoon, the reef drops off quickly and there were many small grey reefs. Here, where they had probably never seen divers before, they would probably have been bewildered by the decom-pressed exuberant swimming movements were instantly recognisable, marring their silece of the group. On each occasion I have just stayed still, and the sharks have finished their display and gone away. The bites which follow such a display are not motivated by hunger; their trevally are biting small fish, slashing bite and the shark disappears.

The back reef margin is shallow, not more than three metres deep, but the coral is lush with much fire coral. In places Tridacna clams are packed tightly together. Coastal heads on the sand flat have large colonies of the coral Turbinaria peltata. There are many parrotfish, groupers and snap-pers, and sometimes an octopus or tur-tle. This is the nite of white tip reef sharks which, unlike grey, are able to ventilate their gills while lying on the bottom. Sometimes you will find small caves in the coral with several white tips lying together. At night they are more active.

After the rest of the lagoon we waited for one of those crisp days when the wind is down and a large swell rolls in over a wall of haze above the reef. That is that sparkling oceanic feel; lots of ions enhancing that atil-illumania captured by Stevenson. We mo-tered across the lagoon picking up thirty spinner dolphins at the bow. Their euphonic songs seemed levitated in the aquamarine water.

Often, these particularly beautiful days are followed by the trough of low pressure whose associated depression casts the enhanced swell on the reef. Each trough brings high cirrus-like connective tissue followed by a scess- of Turner skies and a shifting wind. To avoid any fetch, we change Elisa’s anchor to keep the reef between us and the wind which clocked from northeast to north, then quickly through the west before blowing hard and cold from the south with the pas-sage of a high.

The winter tradewind, when it re-sumes, can blow with a freneticism that is quickly tenuous. But this is the wind which will effor-tlessly drive Elisa to the west, towards Tonga and a breeding ground of hump- back whales.

Pete Atkinson, a former volunteer at Sherkin Island has sailed all over Polynesia in the last fifteen years, in a quest for underwater photos and material for articles. He now lives aboard a new boat, VIGIA, in the South Pacific.

See Centre Page spread...
The reef sharks are stimulated by smell and the sounds of other fish feeding. Grey Reef Sharks (left) also have good eyesight and can see quite well in the water but the White Tip Reef Shark (top right) has poor eyesight and has to rely heavily on smell.
Planting for Colour

A HOUSE, a street, a yard or a frontage can be brightened up by growing flowers and shrubs in containers, window boxes and hanging baskets. The effect is almost instant. You can also achieve a splash of colour for special occasions such as festivals, local events, or tidy towns competitions.

Tubs and Containers

Containers come in a wide variety of shapes, sizes and materials, including wood, metal, concrete, clay and glass fibreglass. They can even be made from such unlikely items as lorry tyres and chimney pots.

The appearance of the container is as important as the flowers. It should not be out of character with its surroundings, such as a modern concrete ‘con’ in a medieval courtyard.

Consider the overall design of a group of containers. For the best effect the containers in a group should be of the same type and should be placed to blend with their architectural surroundings. In a grouped arrangement, vary the levels by using different sized containers and plants, or stage containers on bricks or pedestals.

Large deep containers are suitable for growing small trees such as birch, eucalyptus, or rowan; ‘accent’ plants such as cordyline or hydrangea; or by lowering the baskets into a tub of water.

Window Boxes

Window boxes are useful for smaller plants such as petunias, antirrhinums with lobelia in mondomii, pink ivy-leaved geranium or obegonia. Varying levels and gables in paved areas.

Groups of containers, say three in the corner of a paved area, look very effective if the same combination of plants is used in terms of species and colour is throughout. In linear schemes, such as a line of tubs along a street, the floral colour scheme could progress through red, orange, yellow, blue to white and back again in reverse order or starting from white through to red and back again, with tubs of red flowers emphasising a particular feature of the town.

Hanging Baskets

Hanging baskets enable plants to be grown in unlikely places, beside windows and doors, beneath arches, or hanging from walls and lamp standards. Various types of basket are available, made from wire, plastic, wood or compressed peat. In each case water conservation is vital, wire baskets being especially prone to drying out. Solid baskets, however, should have drainage holes at the bottom as well as holes around the side for plants.

Choice of Plants

Tubs and containers. Use the guidelines given under this heading below.

Windows boxes. Apart from considerations of light, shade and exposure, thought should be given to the colour of the background wall

• against a dark red brick wall in sun: white marguerites and sedum, blue stocks and trailing lobelia, in shade: white tulips, grape hyacinths and variegated ivy,
• against a grey wall in sun: zinnas, geraniums and trailing campasula; in shade fuchias, heliotropes and trailing begonias.

Hanging baskets.

As with window boxes, choose plants which will contrast with the colour of the wall behind. Suggestions include:

• a selection of ivy-leaved geranium and Helichrysum petiolare • nasturtiums and trailing fuchias • blue petunias, a bright blue lobelia, variegated ivy and a yellow calceolaria at the top • a red dianthus at the top with trailing lobelia, pink ivy-leaved geranium or oregonia.

Care in Planting

Tubs and containers. As good drainage is essential, holes must be drilled in the base of the container; if none exists already, and a good layer of rocks or stones provided. If no holes are possible, extend this layer to a third of the depth of the tub. Avoid standing containers directly on grass or soil. Use a good potting mixture when planting such as John Innes No. 3 with added peat to retain moisture. Regular watering is essential. Bushy or taller plants should be in the centre with trailing plants, such as lobelia, ivy or nasturtium around the edge. Lattes should be well planted with no bare soil showing.

Window boxes. Provide a good layer of drainage material at the bottom, covered with peat, followed by a moisture retaining potting mixture in which the plants are planted. Alternately potted plants can be sunk into moist peat which allows the colour scheme to be changed easily. The soil should be changed annually. Regular and careful watering is essential, to gether with an occasional foliar feed.

Hanging baskets. All baskets should be attached to strong hooks or brackets and the chains should be sound. Water regularly, either through a can with holes sunk in the centre of the basket, or by lowering the baskets into a tub of water. Feed occasionally with a liquid fertiliser.

As with tubs, taller or bushy plants should form a centrepiece at the top, with trailers around the edge. With wire or slatted containers, thread some of the plants through the holes, so that no part of the container may be seen.

Potting compost, A; peat, B and D; and stones for drainage, C, in a window box with petunias and tulips.
The weever is the smaller of the two species, reaching only 15cm long, while the Greater Weever reaches a maximum length of about 42cm (Table 1). The Lesser Weever is found all around the Irish coast, but it is only common in certain sandy areas between the high-tide mark and a depth of 50m (e.g. Yonghal, Wexford and Roundstone). Spawning occurs throughout the summer and autumn, and the eggs and larvae, which are planktonic, have been recorded from several parts of the Irish coast between May and September. Although relatively few specimens of Greater Weever have been recorded from Irish waters (only 26 specimens to-date), the species may be more common than we think because it mainly occurs in deeper water (30-100m). Indeed, up until the late 1950’s, the Greater Weever was considered to be rare but it has now been recorded throughout most months of the year, albeit mainly from the SE, S and SW coast (Table 2). Considerable research has been carried out on the weever’s sting, which appears to be entirely defensive, and is not used for catching prey. When erected, the black colour of the first dorsal fin shows up against the sand where they lie, and may serve as a warning. It has been suggested that juvenile Common Sole (Solea vulgaris), which have similar black markings on the upper-side of the pectoral fin and which occupy the same habitat as the weever, mimic the defensive behaviour of the weever fish by lifting the pectoral fin above the sand when threatened.

The weever secretes a very strong neuro-toxic venom that produces an agonisingly painful reaction in humans. Where weever are numerous, bathers risk threading on partly buried fish. In certain areas, commercial fishermen, and particularly shrimp trawlers, are also at risk whilst sorting their catch. At first a sharp stab is felt, the pain increases in severity for up to an hour and may last for twenty-four hours. The pain is at first localised to the site of the puncture, but subsequently spreads to the entire limb. Bleeding is not severe, but localised swelling and discoloration of the tissue is notable. Although death rarely occurs following a weever sting (no deaths have been recorded in Ireland), the pain and later discomfort are long remembered. The most widely recommended remedy is to soak the affected area in very hot water as soon as possible; the heat apparently destroys the toxin. However, in all cases, medical assistance should immediately be sought.

To re-use plastic shopping bags is a small action which can have a big impact. We all need to work together to reduce the amount of plastic waste ending up in our oceans and ultimately our beaches. The weever, a species of importance for our marine environment, has special features which help it to avoid predators. It is well adapted to their benthic environment where they lie in ambush, partly buried in the sand. Both species have a long body, with a deeply compressed head. They have mouths that point obliquely upwards and eyes that are positioned on top of the head. The small first dorsal fin, which is positioned close to the head, has sharp venomous spines and behind this, a much longer second dorsal fin. The gill covers are also armed with smaller venomous spines. The colour is usually sandy yellow-brown.

Apart from size and habitat considerations, the two species of weever can be distinguished by carefully examining the first (venomous) dorsal fin, which is entirely black in the Lesser Weever, but only partly so in the Greater Weever. The pectoral fins are rounded in the Lesser Weever and square in the Greater Weever. The Greater Weever also has short spines above and in front of the eyes and another behind the upper lip, the Lesser Weever lacks these spines. Lying camouflaged and partly buried in the sand during the day, weevers can quickly lunge upwards to catch passing prey. However, they appear to be more active at night when they emerge from the sand to feed on a wide variety of prey organisms such as gobies, young flatfish, sandeels, dragonets, sprats, shrimps, amphipods, isopods, worms, molluscs, and small crabs.

In a recent survey by the Department of the Environment it was found that only 36% of people have ever re-used plastic shopping bags. Can you help increase that percentage?

Table 1. Size frequency distribution of Greater Weever in Irish waters

<table>
<thead>
<tr>
<th>Total Length (cm)</th>
<th>Fork Length (cm)</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum</td>
<td>26.8</td>
<td>110</td>
</tr>
<tr>
<td>Mean</td>
<td>34.5</td>
<td>278</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>4.2</td>
<td>129</td>
</tr>
<tr>
<td>Sample Number</td>
<td>21</td>
<td>21</td>
</tr>
</tbody>
</table>

Table 2. Distribution of Greater Weever

<table>
<thead>
<tr>
<th>County</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co Kerry</td>
<td>11</td>
</tr>
<tr>
<td>Co Cork</td>
<td>9</td>
</tr>
<tr>
<td>Co Waterford</td>
<td>3</td>
</tr>
<tr>
<td>Co Wexford</td>
<td>1</td>
</tr>
<tr>
<td>Co Dublin</td>
<td>1</td>
</tr>
<tr>
<td>Co Mayo</td>
<td>1</td>
</tr>
</tbody>
</table>

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At present, only 32% of glass bottles are recycled in Ireland.

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Tel: 027 - 50380
Farran Forest Park
CORK

Location: 38km west of Cork on N22 to Macroom.
Habitat: Old red sandstone forms the bedrock under Farran Wood, but there are relatively few outcrops. The bedrock is thickly covered with soil carried to the area and eventually deposed by retreating glaciers about 25,000 years ago. These soils are now being eroded by the waves in the reservoir which became part of the Lee hydro-electric scheme in the mid-1950s.

Geology: Carboniferous limestone overlain by glacial drift.

Other Flora: There are carefully sited clumps of broom, laurel and rhododendron.

Fauna: Farran is rich in both animal and bird life. A wildlife enclosure supports a variety of wildfowl and mammals including a herd of red deer.

History: Farran Wood is 53 hectares in area, and together with the nearby Looneys Wood forms a more fragment of the once extensive Farran Demesne, owned in ascendency times by Captain Clarke - a family name which is also associated with a popular tobacco. The demesne passed to a Captain Manwess, who converted the pasture land to woodland. Captain Farran was a keen sportsman and besides planting stands of common coniferous species, also planted carefully sited broom, laurel and rhododendron to provide cover and food for the game birds which he released in the woods.

Facilities: There is an ecology display housed in the restored hunting lodge. Children’s adventure playground, wildlife enclosure, scenic views, walks and trails.

Derrycarne Wood
Doire Carna
LEITRIM

Location: 3.5 km north Drumod, 13 km south of Carrick-on-Shannon off N4 to Longford.

Ground vegetation is abundant and many varieties of wild shrubbery and remnants of the former garden shrubbery abound. Lify ponds of the former estate can be seen by the lakeside.

Fauna: All the common species of woodland including mink, squirrel, badger, pigney shrew, pine marten and otter can be observed here. The lakes and lake shores are the habitat of many varieties of wildfowl while gamebirds can be seen in the woodlands and surrounding countryside. Derrycarne is an ideal location for viewing wildlife.

History: Derrycarne is the old Irish name for oak wood which probably formed part of the extensive woodlands recorded as lying north of Lough Boora in the 17th century. The Estate was owned by Mathew Nesbit, High Sheriff of Leitrim, around 1798. He was succeeded by Francis Nesbit who died in 1854 and subsequently Ormsby Gage MP.

Facilities: Car park, picnic site, forest and riverside walks, access to the Shannon.

The Secret Lives of Monks and Megrim!
By Colm Lordan

The anglerfish is the most valuable demersal fish species in Ireland.

The Marine Institute reports on an exciting project aimed at finding out more about two important commercial fish species.

In June 1999 the Marine Institute, Marine Fisheries Services Division (MPSD) commenced a project entitled ‘The distribution and biology of anglerfish and megrim in waters west of Scotland’ funded by the European Commission. This project is co-ordinated by the Scottish Association for Marine Science (S.A.M.S.) and involves teams of scientists from the Marine Laboratory in Aberdeen (MARLAB) as well as the Marine Institute.

This project focuses on the biology and fishery of four types of fish off the North-West of Ireland: two anglerfish species (Lophius piscatorius and L. budegassa) and two megrim species (Lepidorhombus whiffiagonis and L. bocourii). The fishery for these species has increased dramatically in Ireland and Scotland over the past 10 years.

In Ireland anglerfish and megrim are the first and third most valuable demersal fin-fish species with provisional 1999 landings worth £7.9m and £5.9m respectively.

The objectives of the project are to map the distribution of all four species in the fishery, to look at their reproductive biology, diet, and importance to the ecosystem - as well as to assess new methods of determining the age of the fish. All this information will be fed into the International Commission for the Exploration of the Sea, which in turn assesses the abundance of the stock and advises the European Union on the safe levels at which it can be fished.

Progress to date

In year one the work programme will focus on collecting biological samples and fisheries data at sea on research and commercial fishing vessels. The Marine Institute is primarily responsible for investigations into megrim while the other partners are concentrating on anglerfish.

Commercially landed samples of megrim have been obtained from the Stornan Ban area on a monthly basis since July 1999. In addition large numbers of samples and data have been collected during sampling trips aboard commercial vessels. To date there have been five trips on commercial vessels (one of which was on a Scottish commercial vessel the Erdevaue III) and a sixth commercial vessels trip is planned. In addition, samples and data were obtained aboard the Scottish research vessel Scotia during a groundfish survey on the Rockall Bank. Preliminary results suggest large variations in population structure of both anglerfish and megrim. Shallower areas of the continental shelf and banks such as Rockall and Stornan appear to be important nursery areas for anglerfish. The larger mature fish are more common in deeper waters off the slope. Maturity in anglerfish is attained at an extremely large size (>75cm for L. piscatorious). Areas West of Achill and West of Aran grounds could be the source of recruits to the North-West Ireland nursery areas.

For megrim the results to date have shown that the sex ratio of the megrim population exploited by the commercial fishery is heavily female biased. Also the sex of megrim varies significantly with depth and area. The megrim population structure appears to vary between areas with larger fish being caught towards the north of the area and at Rockall.

Planned Future Work

Monthly sampling trips on commercial vessels will continue until June 2000. In addition, a dedicated anglerfish/megrim survey is planned for April 2000 aboard R.V. Scotia. Two commercial vessel charters are also planned for 2000. Laboratory work and data analysis will begin in July 2000. This project is scheduled to finish in January 2001.

Colm Lordan, Marine Institute, Abbotstown, Co. Dublin.

Photos: Marine Institute

Landings of megrim were worth £5.7m in 1998 with larger fish being caught towards the north of the area and at Rockall.
By Daphne Pochin Mould

Ever since people first came to live in Ireland, some 9,000 years ago, they have left behind them some relics of their lives and thoughts. Shaped fragments of flint, the ashes and burned stones of their fires and cooking places; great tombs and circles of stone; trackways and house foundations; round towers; abandoned railway lines. This is the hardware of our history, a great cultural mass of information, as yet not fully explored, important not only for Ireland but for the world, and we are rapidly destroying it all.

Some of it exists nowhere else in the world: the fairy forts, the raths, most of today. Of strictly archaeological remains, some relics of their lives and thoughts. Shaped fragments of flint; the ashes and burned stones of their fires and cooking places; great tombs and circles of stone; trackways and house foundations; round towers; abandoned railway lines. This is the hardware of our history, a great cultural mass of information, as yet not fully explored, important not only for Ireland but for the world, and we are rapidly destroying it all.

Of course, destruction has always taken place, but never at the pace of today. Of strictly archaeological remains, which includes the Fairy forts, the raths, most will be gone in thirty years time and all by the start of the 22nd century. If we do not act now, we lose all, and saving the past depends very much on local interest, local action and local attention, so that action may be taken.

We lose all, and saving the past depends very much on local interest, local action and local attention, so that action may be taken.

The figures are frightening. Up to 34% of monuments known in 1838 are gone and the present destruction rate is running at 10% of those left for every ten years. Dr. Muiris O’Sullivan (of the National University of Dublin) undertook a sample survey for the Heritage Council. In the sample area he studied, 478 of the monuments total of 1400 known in the 1820’s were gone. Of those recorded by the Archaeological Survey in 1980, 11% had vanished, another 1% between 1997 and 1998. Almost all will be gone by 2100.

On a county basis, Westford has the worst record and will soon have nothing left. 68% of known monuments are gone, 15% since 1968 and of the survivors, 10% are at risk of immediate destruction. Kerry is the next worst, gone, Cork has lost 30% of known items. Monuments most at risk are in pasture and are earthworks. Of the destroyed known items, 83.8% were in pasture and easy victims to enlargement of fields, knocking of hedges and reseeding. 72% of those lost were earthworks - raths and ring barrows and so on. Recorded land improvement schemes took 54.5%, various developmental schemes took 9.7% and natural erosion on coasts took 16.2%. The National Monuments Record of Sites on the 6 inch maps seems to have no effect on all this. It is estimated remains are being destroyed at a rate of some 1500 a year.

And these are only the earlier remains. The more famous castles and abbeys are in State care and protection but much more consists of ruins on privately owned land, ruins now feeling the effects of time and weather and needing some immediate and expensive repair if they are not to collapse. And later, there are the mills, some of which can be adapted to new uses, and the beautiful old cut stone industrial and domestic buildings of our towns, now so often Knocked, rather than rehabilitated to new use.

Heritage is now big business - much of what is being rapidly destroyed, could bring tourists and money if properly handled. Interest in local history is growing, local people are publishing excellent local histories of their areas. And what they are writing about is not going to be there to see much longer.

Duchas, the Heritage Service (Department of Arts, Heritage, Gaeltacht and the Island, 51, St. Stephen’s Green, Dublin 2), is the official State guardian, but real protection and conservation depends on the observation, protests, and action of the people on the spot. Get to know what you have, from the Survey maps and the series of volumes now being published with inventories, information, photos of each county’s heritage. A great many monuments are now marked on the “Discovery” maps, but by no means all. Many places have local historical societies, which individuals can join, or warn of impending destruction, so that action may be taken.

Noor should we ignore the heartless despoliation of the Irish landscape, the unnecessary destruction of old walls, whether drystone or with mortar; the felling of healthy trees and shrubs, the cutting of roadside hedges to English suburban neatness, a truly horrible sight in this country. Hedges, vital habitats for flowers, birds, insects, should be kept trimmed, not mown like lawns. In many places now, the whole roadside beauty is gone, no flowering or fruiting trees, no wild roses, no honeysuckle, no hedgerow flowers, no butterflies, and soon no birds. Over many districts, this destruction of what we once had, what our visitors want to see and enjoy, is running at 100%.

Bronze Age Stone Circle, Curraheba, Co. Cork, as it was in 1981.

Land clearance at Curraheba has damaged, indeed virtually wrecked, the stone circle.

Photo: County Cork Archaeological Survey

Photo: Daphne Mould

Fine masonry incorporating cut limestone, red sandstone and brick in a now demolished old building in Cork City.

Photo: County Cork Archaeological Survey

Serious questions need . . .

... in depth answers!

The Marine Institute
50 Harbour Road
Co. Galway
Ireland
Telephone: 00353-91-567000
Telephone: 353-91-567100
Fax: 00353-91-567177
Email: info@marine.ie

Page 21
I farm 700 acres near Overton, Hampshire, including 60 acres of woodland and 18 miles of well-timbered and wide hedgerows. During my 16 years here, I have tried to farm with a long-term view, not just an annual cropping pattern. However, I must stress emphatically that this long term view, of hedgerows and tree planting etc depends totally on a profitable farming scenario, and for the last 3 years this has been absent.

This situation will apply to the vast majority of farmers in the UK who are keen to maintain hedgerows and woods for the sporting benefits that accrue to them, but who will be unable to continue their earlier land-use profitless farming if farmers.

Let there be no misunderstanding, sporting benefits do thrive on a vast majority of farms - be they tenants or landowners - to dig ponds, plant hedges along field boundaries which provide shelter and food for game and small birds alike. These activities are increasingly burdened with legislation, which will cost more and more. No one today will employ a full-time person to do this work.

In a profitable situation farmers are happy to employ a modest surplus of labour. This policy retains the essential work. UK Farm in-1997 they were £2,000 million. We have done 2 one-acre lots of hazel coppicing, both with 50% grant and without government aid. One was done by a contractor, one with farm labour. Both cost us £4500 per acre after grant. It is extremely slow and labourious work, but we have to do it.

When the coppice has regrown in 9-10 years it might have a sale value, standing, of £1000 per acre, if anyone wants it. Our 60 acres of woodland is almost all hazel and desperately needs coppicing. If farming made a reasonable profit, I would be delighted to do more. We have a smelly material which we spread around. Coppicing is a very effective method of reducing weed growth, if we control it properly and not allowed to grow. This has created a micro-climate and environment, which encourages extra bird life. The swallows love the extra insect life over the reserve and use the muddy puddles for nesting material. We have a pair of Common Sandpiper nest and hatch both years, but the chicks vanished, as did another of a dozen pair of Pheasant Wetts, all taken by Sparrowhawks. This year just one pair of Pigeon Wetts have nested.

Conservation Grants
There are many schemes available encouraging farmers to do this or not to do this. Most. If not all, require long term commitments for perhaps 10 years, and have numerous strings attached. The grant available never amounts to more than 50% of the cost, leaving the farmer to foot the rest of the bill. Although he will probably not benefit at all.

Potential of Farmers
There is talk of more encouragement for farmers to do conservation work, but unless payment for this is at a higher level, it will not work. Any other person speaking recently described the phasing out of most if not all, EC subsidies within 10 years and this would lead to only 20% of the largest farmers surviving. He used the words “survive” several times to describe this new scenario. These 50% largest farmers will use huge machinery with concomitant damage to narrow lane verges, employ less labour than today and will have absolutely no time for spare environmental work in their effort to survive. This will include amalgamation of farms with many buildings becoming redundant and inviting applications for industrial uses. We have seen exactly this situation recently south of Whitchurch. In 1962, 2 employees worked on two Tufton farms, i.e. 22 families. Now just 2 men do the work and there is much objection to the development of the Tufton Manor buildings for other uses.

A recent study by Hampshire County Council suggests that 50% of Hampshire farmers expect to retire within the next 7 years, and about 50% of farmers who expect these situations will have closed - another effect of the development of the Tufton Manor buildings for other uses.
By Dr. Paddy Gargan

The Central Fisheries Board earlier this year launched a campaign entitled “Release your Millennium Salmon”. This educational campaign includes a comprehensive instruction leaflet on catch and release techniques and a video “Catch and Release. The Future is in Your Hands.” As part of this campaign, the Central Board, in conjunction with the Marketing office, offered a prize of £2,000 for charity and two days salmon angling to the angler who caught and released the first wild salmon of the millennium. The prize was awarded to Mr. Ashley Mathews from Cleeggan, Co. Galway, who caught and released a ten pound wild salmon on the Delphi’s Bundredraagh river on February 16th. Mr. Mathews donated the £2,000 prize to Amnesty International.

As a result of falling stocks of Atlantic Salmon, catch and release is one of a range of conservation measures being practised in many countries to reduce mortality in recreational fisheries to allow additional numbers of salmon to spawn. Other conservation measures include:

- Bag limits
- Restrictions on fishing methods
- Limiting the angling season

In order for catch and release to be successful, salmon which have been caught by anglers and released, must survive in good condition until they have spawned. It is important therefore that guidelines for the practice of catch and release are followed to ensure the maximum chance of survival of released salmon. The following guidelines should greatly assist anglers in the practice of catch and release in Ireland.

Fishing Tackle

The angling method used can have a significant bearing on the survival rate of released salmon. Anglers intent on re-catching the fish, or anglers fishing waters where a catch and release rule is in force, should carefully consider the angling method used. Salmon caught by fly fishing using single barbless hooks, have a greater chance of survival than fish caught on barbed hooks or lures with double or treble hooks. Barbless hooks do less damage and are easier to remove and reduce handling time which can be an important factor influencing survival. Barbless hooks can have the barb pinched with a pliers to allow salmon to be released more easily. Where it is not possible to use barbless hooks, the hooks used should preferably be single. The fishing tackle used should be strong enough to enable the fish to be brought in quickly, taking account of the prevailing conditions and the possible size of the fish that might be caught.

Playing and Landing the fish

Once hooked, the way a salmon is played can have a significant effect on its chances of survival. Anglers should avoid exhausting the fish and once the fish is ready it should be brought in quickly. In a river, the fish should be moved out of the fast current into quieter water. Research has shown that exposing a salmon to air for even a short period, for example to take a photograph, can significantly reduce its chances of survival. Playing a fish in the following way will help its chances of survival:

- Keep the salmon in the water at all times
- Use a large diameter landing net with soft knotted mesh
- Avoid beaching the fish
- A gaff or tailer should not be used
- If handling a salmon, always use wet hands

Removing the Hook

Great care should be taken when removing the hook and the guidelines set out below should be followed to increase the salmon’s survival chances:

- Wet your hands and keep the fish in the water
- Handling of the fish should be minimised. When necessary the fish should be supported from beneath and the hook gently removed either by hand or by means of a long-nosed forceps
- If a hook is deeply embedded and cannot be removed, the leader should be cut close to the hook, as fish released with the hook attached generally survive.

Take extra care with fresh fish, as they are more prone to scale loss, injury and subsequent fungal infection. Care must be taken not to squeeze the fish or hold it by the gills.

Releasing and Reviving the fish

After removing the hook or cutting the leader, the fish should be supported in the water facing into the current and given sufficient time to recover. The fish should be held gently until it is capable of swimming away strongly. Anglers should avoid weighing the fish. The weight of a salmon can be estimated from its length using a weight conversion chart. A tape measure or a weighing stick can be used to take the approximate length while keeping the fish in the water. Unless compelled by statutory regulations or local rules, fish that have suffered serious damage (bleeding heavily, hooked in the gills or eyes) should be retained.

Survival chances of released salmon

Research has shown that the survival rate of salmon caught and released can be close to 100% when the above guidelines are followed. Survival rate is greater at water temperatures below 20°C. Very good survival to spawning of released rod-caught spring salmon, which have subsequently spent up to nine months in the river before spawning, has been recorded in Scotland. Spawning success and viability of eggs are unaffected in salmon caught and released in late autumn.

Stocks of multi-sea-winter salmon or spring salmon are at an all time low across their North Atlantic range. Conservation is more necessary now than at any time and catch and release can play an important role in ensuring that many more spring salmon survive to spawn. The following should be borne in mind by anglers when catch and release is being considered for spring salmon. Research in Ireland has estimated the total Irish spring salmon stock to be about 20,000 fish in recent years. Research suggests that spring salmon are genetically distinct from grilse with regard to age of maturity and time of river entry.

Exploitation of spring salmon by anglers averages approximately 33% and can be as high as 80% compared to an average of 15%-22% for grilse in many spring salmon populations up to 80% are females. Each female will contribute an average of 6,000 eggs to a system. If one hundred spring salmon were caught and released and survive, this would contribute almost half a million spring salmon eggs to the system. Small salmon entering rivers early in the year are valuable as they have the early running trait.

Salmon anglers in Ireland can play an important part in restoring salmon stocks, particularly stocks of spring salmon, by practising catch and release and individual anglers and angling clubs should be encouraged to practise catch and release for salmon.

Further Information:
Dr. P. Gargan, Central Fisheries Board, Balinagowan, Mohill, Boren, Glinnevin, Dublin 9.
E-mail info@cfb.ie
Copies of a 20 minute video on “Catch and Release - The Future in your Hands” is available from the above address. (Price £5 including P&P).

Brochure “Catch and Release for Atlantic Salmon” is available free of charge.

“Release your Millennium Salmon” by Dr. Paddy Gargan

Delicious Wild Harvests

By John Akeroyd

Continues from page 10

Nearby grows the closely related but much more robust Alexanders (Smyrnium olusatrum), a Mediterranean wayside plant which has a pungent odour and is reputed to have medicinal properties. Another member of this family is Carrot family or Umbelliferae, Eliecamune (coles heliemen), a stately plant reaching 2–3m tall with spear-shaped leaves and huge yellow daisy heads, is a relic of onetime medicinal use. The Abbey or Friary too on Sherkin Island still has many of the medieval plants growing wild in open seaside ground. Perhaps Sherkin’s most remarkable wild food link with the Mediterranean grows near a dried cottage towards the island’s western end. Here, clumps of Babington’s Leek (Allium am- peloprasum variety babingtonii) produce globular heads of purplish flowers mixed with small onion bulbs on stems over 2 m tall. This handsome wild leek is locally common in the Aran islands and parts of the coasts of Connermarra and Donegal. It also occurs in western Britain. Sherkin is its only Cork locality. The plant is well named for Charles Cardale Babbage, (1808–95), Professor of Botany at Cambridge, loved Ireland and did much to raise money in England for Irish famine victims. Amazingly, the plant’s closest relatives occur in Greece and the Aegean islands. Is it perhaps an ancient, maybe Bronze Age or Iron Age leek, introduced long ago and surviving in open seaside ground on mild Atlantic coasts?

Dr. John Akeroyd, Associate Editor of “Plant Talk” magazine and Editor of “The Wild plants of Sherkin, Cape Clear and adjacent islands of West Cork” has travelled in the Mediterranean region since 1970. He has published numerous papers and articles on Mediterranean plants.

“Release your Millennium Salmon” by Dr. Paddy Gargan

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The Basking Shark and CITES

THE international wildlife trade in millions of dollars annually, has driven massive declines in the numbers of many species of animals and plants. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (known as CITES) was drawn up to protect wildlife against such over-exploitation and to prevent international trade from threatening species of extinction.

Nearly 150 countries have joined CITES. They have banned commercial international trade in an agreed list of endangered species (Appendix I). They regulate and monitor trade in other species that might become endangered (these are listed on Appendix II). All trade in listed species is covered, whether alive, dead, or in the form of manufactured products.

The enormous Basking Shark Cetorhinus maximus is one of the most magnificent marine animals that may be seen off our coasts. It has been fished for over 200 years, and recent commercial fisheries providing fins and oil for international trade have seriously depleted shark stocks.

Collapsing fisheries and low population recovery rates have led to legal protection for Basking Sharks in some regions. However, unmanaged fisheries continue in other countries. Furthermore, the high value of shark meat in East Asia as an ingredient for shark fin soup has driven massive over-exploitation of the species. No Basking Shark populations or fisheries are managed, other than in territorial waters where legal protection has been granted or target fisheries have been prohibited.

Encourage the introduction of fisheries management and research to ensure that international trade is not detrimental to the survival of the species. Basking Shark numbers are legally protected in other parts of the range.

The Basking Shark was threatened in many parts of its range. The few remaining known fisheries are only to catch very small numbers of sharks. This population is only sustainable in protected waters where new ones can be introduced. The few remaining known fisheries are only to catch very small numbers of sharks. This population is only sustainable in protected waters where new ones can be introduced.

Basking Shark Facts
- The second largest shark in the world (after the Whale Shark).
- Related to the Great White Shark, but has tiny teeth and is harmless to man.
- Grows to a length of 10m (30ft)
- occurs in temperate and warm tropical waters worldwide, but populations in different oceans are separated by continents and warm tropical waters.
- The second largest shark in the world (after the Whale Shark).
- Related to the Great White Shark, but has tiny teeth and is harmless to man.
- Grows to a length of 10m (30ft)
- It is harmless to man.

Aughinish Alumina

At Aughinish we extract 1.5 million tonnes of alumina from three million tonnes of extracted Bauxite annually. We expect this alumina to UK, Scandinavia and other European markets where it produces 2.5 million tonnes of aluminium. This much means for the world wide lateral alignment of its lifeblood, durability and versatility, and it is completely recyclable.

Incorporated into the tissues of Aughinish is a network of Nature Trails available in the green, public and safe for walking, hiking, nature study or bird watching. There are three and take available for the study of Ireland’s Wonderful Wildlife in the bushman country, especially between Christmas and Easter. The Visitor Centre is open all year round.
The book contains an introduction to the life presented in clear sections and has a good mix clearly has an enthusiasm and great under- to the professional environ- which should be useful in the field. vars and other related confusable trees of woodlands, the wildlife they support and lands including tree structure and biology, with an emphasis to avoid unnecessary use of chemi- problems and any relevant legal issues. auto- nomy of information to get someone started. Also the species accounts are detailed but concise and the photographs are mostly very current. With the good standard of art to the act of bird watching, fairly extensive glossy and good photographs this could be a useful book for someone wishing to take up bird watching. Bird Guide Text by Lars Svensson & Peter J. Grant Illustrations by Killian Mullarney & Dan Lidsky HarperCollins Publishers ISBN 0 00 219728 6 (24.99 £) The latest effort in serious bird guides from the Collins publishing house is pro- claimed on the front cover as ‘the most com- plete field guide to the birds of Britain and Europe’ and one finds it hard to disagree. The illustrations are of high quality we have come to expect from our field guides, with useful thumbnail sketches of the birds in their natural surroundings as well as the standard identification figures, which are heavily and clearly annotated. The Ultimate Guide to Marine Mammals Mark Carwardine, Erich Hoyt, R. Ewan Fordyce, Peter Gill HarperCollins Publishers ISBN 0 00 220105 4 £17.99/1998 An excellent book for anyone interested in cetaceans and marine mammals. The in- formation included in the Collins Gem, Whale and Dolphins book. Chapters range from the origins of cetaceans to their biology and behaviour, along with the much needed identification section. Each chapter is a large page lavishly illustrated with actual photos of cetacean species. This antique book ideal for young and old alike. The book also goes into great detail about the practical side of whale watching and gives detailed information on preparation for trips, whale watching, recording data and taking photos. Along with this is infor- mation on 30 whale watching destinations from around the world. Savage Earth By Alwyn Scarth HarperCollins Publisher ISBN 0 00 220106 2 £16.99/1997 As our knowledge and cover- ects, environmental, habitation, be- haviour, breeding biology, relationships with man and more. In addition each species is covered in more detail under the same headings. A nice innovation is the provision of a silhouette comparison of the size of the bird in comparison to the size of a human. This gives a much better idea of size than a mere measurement in centimeters can. Distribution maps are given for families and individuals occurring by breeding and wintering ranges. A standard feature of this book is the quality of photographs, in most cases their natural. The underlying physical processes of plate tectonics and continental drift are first explained using clear and help- ful diagrams, showing how the conditions arise which lead to these dramatic events. Many sensationally striking scenarios are reviewed using powerful photographs and terrifying eye witness accounts. The final chapter looks at the state of the art of technological being used to try and forecast these events and allow life saving preparations to be made. Sometimes we may be able to predict and even minimise the dramatic impact of these events. The only fact that we can be sure of, however, is that the Savage Earth will never be tamed. The Workshops on Energy from Biomass and Wastes from Biomass and Wastes 5th-7th December 1995, Dublin Castle Ireland Edited by J Burke, B Rice Teagasc, Oak Park Research Centre, Carlow, Ireland. This publication is a report on a workshop on energy from biomass and wastes, con- ducted from the 5th to the 7th of December 1995, in Dublin Castle. Attending this workshop were experts in the area of energy from biomass and wastes and researchers and policy makers in the US and Europe. The workshop was set up to address one of the most important issues of the mo- ment, the development of renewable and environmental sustainable future. The meeting concentrated on the use and pro- duction of biodiesel, biofuel and biomass. A valuable insight into the current status and position of the development of re- newable resources in bioenergy technologies. The workshop deals with the current efforts to increase the viability and use of bioen- ergy alternatives with an aim to promote a reduced dependency on foreseen oil and the development of competitive options and alternatives for bulk power production. In the end the conference increased eco- nomic development, energy security and envir- onmental sustainability. Forage Fishes in Marine Ecosystems Lowell Wakefield Fisherys Symposium Proceedings of the International Symposium on the Role of Forage Fishes in Marine Ecosystems, Alaska, USA, Nov. 13-16 1996 University of Alaska Sea Grant College Program ISBN 1-56612-049-7 $40.00/1998 This publication contains 56 papers from the Lowell Wakefield Fisherys Symposium. The primary objective of the conference was “to provide findings to assist in the mul- tiplicity management of Alaska marine ecosystems, especially those of the Bering Sea and the Gulf of Alaska including the Exxon Valdez oil spill region.” A dramatic unprecedented decline of Steiner Sea Lances, Harbor Seals, Pur Seals and cer- vical species of seabird prompted research into forage fishes - a major food source to all these species. The Exxon Valdez oil spill in 1989 further prompted this further research for this book. The papers in this volume cover a wide variety of issues such as forage fish basic biol- ogy, fisheries, ecosystems, causes of population fluctuations, assessment methodologies and management considera- tions. This publication carefully trans- lates research findings into information usable by both resource managers and the general public alike. Recreational fisheries - social, economic and management aspects Edited by Phil Hickley and Helena Tomkins Published by arrangement with the Food and Agriculture Organization of the United Nations by Fishing News Books ISBN 0-941332-51-6 £50.00/1998 Because since 1989 the status of recre- ational fishing has changed markedly, show- ing a slow but steady decline, there is now a definite need for a greater understanding of the value and management of recreational fisheries. This book provides some recent data on this subject based on official data, estimates of participation in the many European Inland Fisheries Advisory Commission (EICAF) field surveys. The book encloses some interesting re- cipes of the symposium topic on the current status of recreational forage fishes as well as good valuable reports of surveys among the countries of the EICAF with the aim of determining and estab- lishing criteria on social, economic and management aspects of this. It is an up-dated and excellent reading book for an- glers and people interested in the subject. Rehabilitation of Rivers for Fish Ian G. Cowx and Robin L. Wellcome Published by arrangement with the Food and Agriculture Organization of the United Nations by Fishing News Books ISBN 0-941332-60-6 £49.50/1998 This manual provides the rationale, guidelines and techniques for the rehabilita- tion of a river system. It is intended for the use of fishery managers, fisheries and river conservation workers, planners, and civil engineers working on pro- jects involving protection and rehabilitation of inland running waters. It describes the great variety of techniques for the restoration of rivers related to the protection and restora- tion of fish movements, management of aquatic vegetation and impact of man ac- tivities on aquatic habitats. A very well illu- strated account of fisheries management and a must for both reference and research for the building fisheries scientist. The Unpredictable Mistress By Harris Stewart Best Books International Company ISBN 0-941332-61-4 $19.95/1997 The Unpredictable Mistress is basically the leading bibliographer giving a fascinating insight into the world of the science. With the use of an autobio- graphical style, the author carries you through the adventures, trials and tribula- tions involved in an amazing career span- ning the entire world. Places that are discussed include; the Persian Gulf, the gulf of Alaska, the Grand Banks, the Bay of Bengal, the south china seas and the Caribbean seas. The book covers processes and experi- ences ranging from Middle East mapping to encounters with killer whales. All in all a very rare account of conveying an inscrutable love for the sea.
Honey, aren’t you beautiful!
**Movies Animals**

This is a two-part puzzle, with the first part being easier than the second. The animal words listed below are hidden in the block of words on the right. See if you can find them.

These animal words are also found in the titles of well-known films. The letters in the title have been jumbled up and only the animal word is given as a clue. Do you know you films?

<table>
<thead>
<tr>
<th>a. <strong>Falcon</strong> = f m h t e c l s n a o t a</th>
<th>b. <strong>Cat</strong> = n n f o t o i o c t h a a</th>
<th>c. <strong>Cuckoo</strong> = c c w t o e e h k s l v o e o n r s e n</th>
</tr>
</thead>
<tbody>
<tr>
<td>d. <strong>Mockingbird</strong> = i o d k r c i k b i t a l g o m l</td>
<td>e. <strong>Horse</strong> = p h r e w h i e r o t s r e</td>
<td>f. <strong>Deer</strong> = r r t d u h e h e e e n</td>
</tr>
<tr>
<td>g. <strong>Horse</strong> = g h i n n l t e o k i</td>
<td>h. <strong>Cow</strong> = u n r g i g b l a l</td>
<td>i. <strong>Rabbit</strong> = b g d w o f e r r i b a m a h r o t</td>
</tr>
<tr>
<td>j. <strong>Animal</strong> = m a f r a n l a m i</td>
<td>k. <strong>Apes</strong> = s e l n o t t f a e h c a p p</td>
<td>l. <strong>Beast</strong> = d b u a h b t s t e y a e n t e</td>
</tr>
<tr>
<td>m. <strong>Birds</strong> = i b h e r s d t</td>
<td>n. <strong>Fish</strong> = n f c e w s h d a a l a l a d</td>
<td>o. <strong>Wolves</strong> = o i e n c w d s t v e l a h s</td>
</tr>
</tbody>
</table>

---

**Minding the Park**

Four rangers have been given the job of looking after a large park. The park has four ponds and four separate areas of forest. To give each ranger equal responsibility, the park is to be divided so that there are four areas. Each area must be the same size and shape and must include a pond and tree. Can you see how the dividing lines are drawn (there is only one way)?

Answers on page 29.
Kedgeree Salad

This traditional Victorian breakfast dish with its origins in India can be served at any time of day, hot or cold.

Ingredients

- 450g/1 lb smoked fish*
- 225g/8ozs cooked long grain rice
- Choose from finely chopped: roasted red or green pepper, corn, spring onion, peanuts, pineapple chunks, hard boiled egg
- 3 tablespoons mayonnaise
- Chopped parsley
- Salt and freshly milled pepper

Method

- Place fish in cold water (parsley stalks, bay leaf and lemon slice added).
- Bring to simmer and cook gently for 4-5 minutes. Remove, flake and chill.
- Combine all the ingredients in a large bowl.
- Fold in mayonnaise.
- Sprinkle with lots of chopped parsley and serve.

To serve hot:
- Combine cooked onion and curry powder with rice, fish, eggs and seasonings.
- Stir in cream and heat or bake until heated through. Serve piping hot with lots of chopped parsley.

* You can substitute smoked coley, cod or haddock.

Serves 4.

For further details on fish recipes write to:
BIM (Irish Sea Fisheries Board),
Crofton Road,
Dun Laoghaire,
Co. Dublin.
Tel: 01 284 1544   Fax: 01 284 1123
Web Site: www.bim.ie
**MOVIE ANIMALS**

a. The Maltese Falcon; b. Cat on a Hot Tin Roof; c. One Flew Over the Cuckoo’s Nest; d. To Kill a Mockingbird; e. The Horse Whisperer; f. The Deer Hunter; g. The Lion King; h. Ragging Bull; i. Who Framed Roger Rabbit?; j. Animal Farm; k. Planet of the Apes; l. Beauty and the Beast; m. The Birds; n. A Fish Called Wanda; o. Dances with Wolves;

**TAKE YOUR PICK**

b.

**A STROLL IN THE PARK**

At the Bottom of the Ocean

Here’s a picture for you to colour!

**Answers to Puzzles on Page 27**

**Take your pick!**

Can you pick out the only animal that lives in the sea?

(Answer in box on the left)

**Visit the Sherkin Island Marine Station Website**

http://homepage.eircom.net/~sherkinmarine
We got up at 5am each morning to avoid the 40°C midday heat. It proved a very challenging task for me but because of just one day we stopped to find a ring of quick sand just infront of us containing skeletons of unfortunate animals. That same day we set up shelter on a soft sandy bed in a great valley. Then it started raining for the first time since we arrived. Of course we took advantage of it and had ourselves a shower. The next thing I knew, people were shooting and we had formed a chain throwing our rucksacks to higher ground. Ten minutes later a red river appeared and there it was gushing through my legs. We were caught in a flash flood. The adrenaline was pumping in all of us. Afterwards we were very happy in how we all worked together as a team. Each night we slept soundly outside in our sleeping bags under the sparkling stars.

One of the highlights of the trek was climbing to the highest peak of the mountain range. I have always loved climbing mountains with their powerful energy. But this one was the highest and steepest. We had rucksacks on us weighing over 20kg. I was sure that one of us was going to fall down backwards. In the end the hike became a race to the top against the sun setting. I just made it. The view of the mountains against the coloured sky was very beautiful.

I celebrated my 18th birthday in the heart of the Khan Khentii mountains on the border of Siberia. I was helping in the development of a fire management plan. We each had our own horse for those few weeks. The local rangers were amused at my freckles and laughed as they gave me the brown speckled horse! Riding the horses gave us an extra sense of adventure and allowed us to see more of the protected lushicous countryside. I enjoyed walking to the stream each day to wash and collect water. Cooking on our fire was good fun and we tried to make the food taste better.

For the last three weeks I was back down in the Gobi Desert. We stayed in the small towns of Bayan-Ovoo and Khanbogd. We worked with the locals building new models of public latrines. It was very satisfying taking part in digging the six foot deep pit and making the concrete slabs. We were all very proud of ourselves when the toilets were completed. During this project there was a more serious approach taken in our own personal development. We all had the chance to be group leader for the day. That involved organizing the day’s work and taking responsibility for all the decisions needed to be made. During my leadership day I had a meeting with the governor of the town. I was also really happy with my organisational skills when I went out to see how the work was getting on and I found six separate groups doing different tasks. Staying in the towns allowed me to interact more with the locals. I learned a lot about the traditional Mongolian culture. The Mongolians were very pleased with our help and one day treated us to a freshly slaughtered goat.

We were all so different and so the communal sleeping areas, cooking on fires and no running water. There was no escape from the 24 hour living environment of the group and project. I found the greatest challenge to be the team work, relating to other people and getting on with each other. We all had the chance to explore the world and see new things. I now look at the world with a renewed smile.

Ten Weeks in Mongolia

Anne Marie Peters is an eighteen year old student in Trinity College Dublin. She is from Athy, Co. Kildare and she is a Gold President’s Award participant. Last year she was one of five young people who went on one of Raleigh International’s very demanding ten week long expeditions. The rest is her story...

My name is Anne Marie Peters and I’m doing my Gaisce Gold Award. Last summer I went on an expedition to Mongolia with a group of 120 international young people. It was an amazing new experience. For me it was one of the best things that had ever happened. It gave me a chance to explore the world untouched by man.

For the first 18 days I trekked with a group of 15 people through part of the Gobi Desert. It proved a very challenging task for me but because of just that I was pushed to my limits. We got up at 5am each morning to avoid the 40°C midday heat. The vast empty barren land was gobsmacking. “The middle of nowhere” were words that often came to mind. While walking we saw gazelles, camels, eagles, scorpions and snakes. Everything was new to me. I noticed the camels with their humps hanging limply from their backs. One day we stopped to find a ring of quick sand just infront of us containing skeletons of unfortunate animals. That same day we set up shelter on a soft sandy bed in a great valley. Then it started raining for the first time since we arrived. Of course we took advantage of it and had ourselves a shower. The next thing I knew, people were shooting and we had formed a chain throwing our rucksacks to higher ground. Ten minutes later a red river appeared and there it was gushing through my legs. We were caught in a flash flood. The adrenaline was pumping in all of us. Afterwards we were very happy in how we all worked together as a team. Each night we slept soundly outside in our sleeping bags under the sparkling stars.

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For further information contact John Murphy, President’s Award, Dublin Castle, Dublin 2. Phone 01 4758746. Website www.p-award.net
THE STORY SO FAR - Captain Cockle, his wife Dr. Catherine Cockle, and the grandchildren Jenny and William have flown to the North Sea in the amazing flying submarine Cormorant to rescue a pair of divers trapped on the bottom of the ocean under a collapsed oil rig, where a large demolition charge is still ticking. To get inside the wreckage, Captain Cockle has used his secret miniaturizer to shrink the Cormorant and its crew but, in trying to reach the Deepstar, William has fallen into a giant sea anemone, and is being sucked into its stomach . . .

"Granny! Get me out! Please!!" But Dr. Cockle had something even worse to worry about! As she pulled on the safety line to free her grandson, the huge prawn that had knocked him into the anemone loomed up with its claws open.

"Granny! Behind you!"

Dr. Cockle screamed and fell flat on the sand. The prawn rushed over her - straight into the anemone! William could see it kicking and jerking as the terrible tentacles closed around it, and felt the anemone's grip slacken on his legs.

"Pull, Granny!" And with a slippery "Pop!" he was free.

The last of the tentacles closed over the prawn and it was gone . . . into the bulging sack of the anemone's stomach.

"Quick!" said Dr. Cockle. "Before anything else down here gets hungry!"

As soon as Dr. Cockle had treated the two divers, William settled himself into the pilot's seat of the Deepstar and operated the controls as Captain Cockle told him over the radio. Bubbles hissed from the sides of both tiny submarines and shot out of the pipe into the open sea, sucking them after it in a flurry of rushing water. The two submarines were picked up in the fist of the giant shock wave and churned like socks in a washing machine - over and over, up and down, round about!

The controls of the Deepstar were pulled from William's hands. Bubbles seemed to be flying in all directions outside the porthole. There was a terrific "crash" - and then silence . . .

"Are you all right, Granny?"

"I think so," said Dr. Cockle. "But what's that out there?"

William could see something long and yellow hanging from the Deepstar as it lay on the sand. It was one of the Cormorant's mechanical arms . . . broken right off! But of the Cormorant itself, or of Jenny and Captain Cockle, there was no sign at all!

Are Jenny and Captain Cockle fish food? - Find out in the next episode - The Giant Crab - only in Sherkin Comment.
A Question of Values

By Jim Lichatowich

I OFTEN turn to my heroes for advice when I struggle through a difficult problem. Aldo Leopold is among those I consult. He was a wise man who could help from his thoughts while wrestling with the implications of Oregon Trout's petition to review the status of the lower Columbia River coho salmon, and the Snake River chinook salmon. Leopold said, "I suspect there are two categories of judgment which cannot be delegated to experts, which every man must judge for himself, and upon which the intuitive conclusion of the non-expert is perhaps as likely to be correct as that of the professional. One of these is what is right. The other is what is beautiful." Beauty refers to the ecological beauty of diverse, stable and productive ecosystems.

Leopold's words have a direct message for the debates that will take place before and after the status of the threatened stocks of salmon is determined. What is right refers to the way we balance today's economic needs with our moral and legal obligations to manage resources for the use of future generations. What is beautiful refers to the ecological beauty of a great river basin like the Columbia: tremendous natural productivity, amazing biological, geologic and climatic diversity, and especially, the diversity of stocks of anadromous salmonids. Our judgement of ecological beauty will determine the quality of the world our descendents will live in. The experts and their technical information are needed to review the status of the salmon stocks under petition and determine if their existence is in fact threatened, but it's up to you to decide if those stocks will continue to exist.

What is right and beautiful in this context are questions of individual values—that is why your opinion carries as much weight as the experts. Environmental debates that are at their root based on differing values, usually resolve themselves into choices between short-term economic needs and long term obligations to future generations. The spotted owl debates characterized this in the extreme. We have allowed the intellectual level of the public to debate over the spotted owl to degenerate into a slogan, "owls vs jobs." There can be no satisfactory outcome to a debate that has man fighting against his ecosystem — in the long run, everyone will lose. When an issue degenerates to a slogan—a slogan that has man fighting his ecosystem—it usually means management has failed in its responsibilities.

The debate over the status of threatened stocks of Columbia River salmon has already begun to separate into interest groups seeking to advance their values for short term economic needs or long term conservation. Hopefully the experts will not remain silent too long. Hopefully full information will be made available to the public so the debate can be carried out at a higher intellectual level than politicized slogans. But if your opinion is as valid as the experts on the questions of values, what is the role of the experts with their specialized information?

Between the extremes of only short term economics and total preservation there are several possible alternative courses of action. Each alternative carries a set of risks economic and ecological risks. The experts have the experience and knowledge to identify reasonable alternatives and define the economic and ecological risks for each alternative. Devising risks and alternatives is the expert's job and you should insist they do it. Unfortunately, there is a lot we don't know about the stocks we may be destroying. Where we just don't know what the risks are, the experts should say so. The public has its own way of assigning risks when scientific data are lacking and we do not know the consequences of our choices.

Selecting an alternative and deciding how much risk to accept is a matter of individual values. An irrigator, for example, may be as concerned about the fate of threatened salmon stocks as you and I but his values may let him accept more ecological risk and less economic risk than you or I would be willing to accept. Scientific data can define the risks but there are no scientific rules to tell us how much risk is acceptable, and it's probably better that way. You and I won't make the final decision. We have been given that responsibility by others. But we have a right and an obligation to let the decision-maker know where we stand on these important value judgments.

Very few decisions are made this way and that is one of the reasons we have reached this point of crisis. Too many decisions were made without informed public input and without accountability to the public for the risks taken. Don Erman and Edwin Penner wrote in the March-April, 1989 issue of Fisheries magazine on this subject. They said too often the experts hide decisions that are really questions of public values under the guise of technical or scientific questions. They made a strong argument to biologists "don't fear the common man" and face up to the tough questions and conflicts that arise from differing values. When the scientist or administrator does otherwise, they in effect substitute their values for the public's values. Of course, it's easier than facing up to the tough, value-based conflicts which often have no middle ground. In fact, it's very possible that the debate over Columbia River salmon will never get to the evaluation of alternatives and risks and the honest airing of values I expect you will see the cautious approach, the one that permits win win optimism while limiting the argument to "scientific" questions. This approach will lead us to turn again to technology hatchery technology. I say again because this won't be the first time or second or third time we have optimistically predicted that hatcheries will cure all the shortcomings of management on the Columbia.

Aldo Leopold had a few appropriate words on optimism generated by comfortable, old modes of thought and action. He said, "Timidity, optimism, or unbending insistence on old grooves of thought and action will surely either destroy the remaining resources, or force the adoption of policies which will limit their use to a few."