



A gannet in search of its next meal off the Old Head of Kinsale. The effects of climate change have long been evident on land. Now, ominously, changes are becoming apparent in the seas.

Picture: Sheena Jolley

# Sounding an SOS for our troubled seas

GLOBAL warming is really ocean warming. The seas, more than 10km deep in places and covering 71% of the Earth's surface, have a huge capacity to absorb the sun's heat. Land masses heat up and cool down quickly but sea temperature changes imperceptibly. The ocean is not easily provoked temperature-wise but we should not take this for granted. Global warming depends on many things, the orbit and tilt of the planet, fluctuations in the output of the sun, and the dimming effect of particles spewed into the atmosphere by volcanic eruptions are significant factors. Human beings began changing the climate 10,000 years ago when they started clearing land for farming; forests act as heat sinks, grasslands don't. Then, in the 18th century, the large-scale burning of fossil fuels commenced and, since the start of the Industrial Revolution, our fires and machines have been belching prodigious quantities of carbon dioxide into the atmosphere. A greenhouse gas blanket, wrapped around the Earth, traps ever-increasing amounts of the sun's heat, which is absorbed by the world's oceans. The effects of climate change have long been evident on land. Now, ominously, changes are becoming apparent in the seas. The polar regions are warming more quickly than those of the tropics and the ice-caps are melting. But more southerly waters are also in turmoil; the fero-

The waters around these islands are warming and that is having an impact on some seabird populations. **Richard Collins** looks at the long-term consequences

cious hurricanes of recent years are driven by energy stored in warmer seas. Animals and birds are often the first to detect environmental changes. Cod and haddock seem to be moving out of our waters and fish species hitherto unknown here are turning up off our coasts. These are not creatures which live in cool seas, but warm-water ones. The trigger fish, a recent arrival, is a fat comic-book creature which investigates, and occasionally bites, swimmers. There have even been reports of great white sharks in British waters. This feared predator visits the Bay of Biscay but reports of it nearer home are, so far, inconclusive.

The notorious shark is not welcome but cetaceans are ever-popular. The world's largest animals seem to be commoner now and Ireland has a fledgling whale-watch industry. Whales like cold food-rich Arctic seas, but their new-born calves would perish in such waters and so the pods move south to breed. With warmer seas, they need not travel so far. They may be lingering for longer periods off our coasts. But the seas are not just the realm of fish and whales. They also support huge populations of birds. Here, the picture is less rosy and BirdWatch Ireland is sounding the alarm bells. The snake pipefish is an eel-like creature, yellow-brown in colour. Its numbers have increased enormously in the seas around Britain in recent years. The fish is of limited value to seabirds, being bony, hard to digest and not a suitable food for chicks. It has almost become an indicator species: if pipefish are being fed to chicks, the normal prey is deemed to be scarce. Kittiwake and Arctic tern numbers have fallen at colonies in the Shetlands and Orkneys and lack of food may be responsible. At any rate, the adults there have resorted to feeding pipefish to their young. But is this change a consequence of the abundance of pipefish? Are the adults taking the lazy option of catching them rather than pursuing their normal prey, sprats and sandeels? We don't have the answers.



Kittiwakes at a breeding colony. Lack of food may be responsible for falling numbers.

Picture: Mike Brown

Now, puffins are feeding pipefish to their young in the colonies off Kerry, the Skelligs, Puffin Island and the Tearacht. The reports, which are anecdotal, also suggest that very few puffin pairs managed to raise young last year, although the situation is said to have improved this summer. Does this mean that the normal prey items, sprat and sandeel, have become scarce? Siobhán Egan, Bird-Watch Ireland's policy officer, is cautious. "We know very little about the habitat requirements of these prey species apart from their need for sand banks and nursery beds," she says. Detailed research is urgently needed on this and on the food requirements of young puffins. The needs of more secretive species, such as the Manx shearwater which also nests in burrows, are even less well understood. But not all seabirds are suffering. Gannets were

eaten during the great famine of the 1840s but their populations have managed to recover. The lowest point in their fortunes occurred about 1880. There were only two colonies then and the one on Little Skellig had only 30 nests. In 1882, however, there were 150 to 200 nests and by 1908, almost as many as there are today. In 2004, Alyn Walsh of the Wildlife Service, took a series of high resolution photographs from an aircraft. The nest total was 29,683. Gannets first bred on the Bull Rock, off Dursey, in 1858. There have been about 1,500 nests in recent years. A tiny Clare Island colony dates from 1978 but in 1989, the birds set up shop on Ireland's Eye, a mere 14km from the centre of Dublin. It had 188 nests by the year 2000. Despite the massive changes in the marine environment, the gannet population seems to be increasing with compound interest, the lat-



Puffins are now feeding pipefish to their young in the Skelligs, Puffin Island and the Tearacht.

Picture: Sheena Jolley

est colony being established on Lambay two years ago. Perhaps gannets are more tolerant of warm waters

than puffins. They will eat the small fish puffins like, but larger ones, such as mackerel and herring, are more to their liking. A drop in sprat and sand eel numbers would not necessarily impact on them. Where we go from here is anybody's guess. The sudden melting of the ice-caps may produce a temporary cold spell, as thawed-out fresh water pours into the polar seas. This is believed to have occurred at the end of the last ice age and could happen again. It's also possible that the 'great ocean conveyor', whose local branch is the Gulf Stream, will be disrupted. The effects of a reversal of that would be catastrophic for Europe. Even if we manage to mend our ways, which seems increasingly unlikely, and the global warming process goes into reverse, the seas will take ages to cool down.

EDITORIAL: 14

## Irish roaming charges are competitive, says watchdog

ROAMING charges on Irish mobile phones are lower or as competitive as the EU average, according to a study by the Commission for Communications Regulation. Using a mobile phone abroad has become less expensive in recent months and while the average price of an Irish text message sent while roaming is in line with the EU average, this cost is considerably higher than sending a text message at home, ComReg reports. ComReg has welcomed reduced costs for Irish consumers when making and receiving calls while travelling in the EU.

However, ComReg also points out that roaming charges are billed in some cases on a per-minute basis rather than per second. "This has the effect of charging users for unused service portions, and the information notice highlights this by detailing the pricing for various call durations for each operator," the report states. An analysis of data for EU/EEA calls made and received confirms compliance by all Irish mobile operators with regard to the regulatory price ceiling. Calls made and received to the rest of the world, outside the EU, have been consistently

lower than the EU average over four collection periods, ComReg found. Roaming regulations now require mobile service providers to send a free personalised pricing text message (SMS) to an individual's mobile while roaming in the EU. In addition, service providers are required to provide a free number where detailed price information may be obtained. ComReg reports it received no complaints from mobile operators in regard to not receiving the regulated wholesale price cap rate for roaming on other networks from other mobile network operators.



While using a mobile phone abroad is still not cheap, it has become cheaper.

## Cancer hope as 'exciting' vaccine research presented

by Jennifer Hough

A LEADING Oxford immunologist said he is "very excited" about the possibility of developing a cancer vaccine. After 10 years of research, scientists from the University of Oxford, led by Dr Vincenzo Cerundolo, presented their findings to the Irish Society for Immunology at its Annual Conference at the RDS in Dublin. "It has become clear that many tumours are not being diagnosed until it is too late," said Dr Cerundolo, director of human immunology at the Weatherall Institute of Molecular Medicine University, Oxford.

"The immune system does not kick in until it is quite advanced. Our method uses a compound which jump starts the immune response." Dr Cerundolo's team have been targeting existing cells in the human immune system which are capable of killing cancer cells and developed a way of instructing these immune cells to destroy tumour cells. "Cancer has proven to be one of the most difficult diseases to prevent," said Dr Cerundolo. "We all have immune cells capable of destroying cancer cells and it is vital that these cells are switched on to prevent tumours from devel-

oping. Our research has found a way to activate these cells and this represents a significant advancement for cancer patients," he said. Clinical trials on the findings are set to begin next year. "It is very difficult to say how successful it will be, and we do not want to give patients false hope, but this is 10 years of work and a new area of research that we are very excited about." Dr Cerundolo's research group is part of the Cancer Vaccine Collaborative, a network of clinical investigators working to translate their laboratory discoveries into effective cancer therapies.

## Famine soccer song row

by Paul Drury

SONGS sung by Rangers fans about the famine in Ireland were last night threatening to spark a diplomatic row with Scotland. A large number of Rangers fans outraged their greatest rivals two weeks ago when they sang the song at Celtic Park. Its lyrics include the line: "The famine is over, why don't you go home?" Now the issue has been raised with the Scottish Government by Ireland's Consul General Cliona Manahan after a Hoops fan protested to the Irish Embassy in London. The song makes reference to the Irish potato famine, which lasted from 1845-49 and killed more than a million people. With many Celtic fans descended from Irish immigrants fleeing the natural disaster, making light of the subject was always going to offend. Last night, Rangers FC said it has asked its fans to stop singing the song. The club also said it had approached Strathclyde Police on the matter, asking the force to issue a joint statement, saying that anyone singing it faced arrest. The country's largest force, however, said it could not do that until it had made further inquiries. The Scottish government confirmed it had been advised by Ireland's Consul General of the Celtic fans' complaints. A spokesperson for Rangers said: "In the days following the recent Old Firm match, the club were made aware that a substantial number of complaints had been made regarding the singing of the chorus of a song known as The Famine Song by our supporters at this match."

The spokesman said the club had a long-established policy of encouraging sporting behaviour and discouraged the singing of songs which others found offensive. "It is the club's view that the interest of our supporters and the club will be best served by supporters refraining from singing The Famine Song." The Scottish government insisted that several campaigns against bigotry were beginning to work. A spokesman said: "The Scottish government is totally committed to combating sectarianism and bigotry. "We are working with the clubs themselves, as they are part of the solution to the problem." Recently, Scotland's former first minister Jack McConnell accused his successor, Alex Salmond, of failing to devote enough effort to tackling sectarianism. Peter Rafferty, president of the Affiliation of Celtic Supporters' Clubs welcomed the political intervention. He said: "That people should sing such a song is scandalous and disgusting. "This was a tragedy on a phenomenal scale. There are people alive today whose relatives perished in the famine so you can see why there is great concern over this. "You will not hear songs sung about the Holocaust in Nazi Germany. No wonder people are offended by this."

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