MediaBook

Summary

Publication: Irish Examiner
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Circulation: 42083
Author: donal hickey
Headline: Go easy on the turf, for peat's sake

Go easy on the turf, for peat's sake

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OF the thousands of people out walking during the bank holiday, some will choose bogs and general peatland areas, but how many really understand how unique that landscape is? A much-publicised controversy, which has been raging about the turf-cutting ban in parts of the country, centres on the fuel aspect, but bogs also have many other values. They have become magical havens where people can relax in the bracing fresh air and enjoy plant and animal life not seen in other places.

Ireland holds some of the last remaining and most valuable bogs in Europe. And, with bans on turf-cutting set to continue, bogs will increasingly be seen as recreational and protected areas.

Those of us who grew up near bogs well know that cutting and harvesting turf is hard work. Back-breaking toil aside, however, we also have happy memories of long, sunny days in the bog, especially when a meitheal, or group of people, was involved.

There was no better place to put an edge on the appetite and it was vital that all those who laboured were well fed. Some people would boil their kettles on turf fires which provided a distinct peaty taste that made 'bog tay' in the open air so different. Others brought their tea in a whiskey bottle wrapped in a woolen sock. Eggs, also boiled in the bog, and slivers of bacon were other lunch-time staples before sandwiches and packets of Marietta took over.

That was also the era of the slean, a spade-like implement that in skilled hands sliced turf neatly and cleanly from bank. Then about 30 years ago turf cutting machines and 'hoppers' began to take over, often raping the bog landscape and destroying some of it forever. Neither has excess tree-planting helped the bogs.

Recently, the Irish Peatland Conservation Council (IPCC) launched an information and awareness campaign celebrating the importance of peat.

The IPCC's Dr Catherine O'Connell said that despite the fact that we have been cutting turf for nearly 400 years, the vast majority of Irish people know little or nothing about peatlands.

Peatlands, she explained, are wetlands that have been part of the landscape for 10,000 years, accumulating peat at a rate of 1mm per year. They are part of the fabric of our countryside and an iconic landscape renowned all over the world and are a natural store of carbon and water. "Peat is easily destroyed by digging, cutting, draining, burning, overgrazing and erosion," she said.

The IPCC has started to hold workshops and trials to help restore the living plant skin onto bare peat areas of bogs, which have been damaged over the years.

■ For more information: www.ipcc.ie.

Publication: Corkman
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Extract: 1 of 1
Circulation: 7262
Author:
Headline: The future is green at Ballyroe Heights Hotel

The future is green at Ballyroe Heights Hotel

greenhospitality.ie
cláir féile glaise

Ballyroe Heights Hotel cares about the environment and is focused on preserving our amazing natural surrounds for future generation.

Eco-Tourism has emerged as one of Kerry's growing industries and in line with this, Ballyroe Heights Hotel have become a member of the Green Hospitality Programme in conjunction with the nearby Tralee Bay Wetlands, which offers visitors a stunning insight into Kerry's unique flora and fauna.

As more and more of us become increasingly aware of the importance of cultivating and respecting our environment, Ballyroe Heights Hotel has been awarded the Eco-Label from Green Hospitality allowing you, the guest, to choose green hospitality when enjoying a break away.

Publication: Irish Independent
Date: Tuesday, June 26, 2012
Page: 6
Extract: 1 of 1
Circulation: 131.161
Author: Treacy Hogan
Headline: Protect environment or risk extinction of native animals

Protect environment or risk extinction of native animals

Treacy Hogan

SOME of Ireland's native animals are on the brink of extinction because of pollution and over-fishing.

Several bird species, including the common scoter, black-necked grebe, quail, red-necked phalarope and nightjar are under threat, while kestrels and skylarks are also declining "significantly".

The Environmental Protection Agency (EPA) report says just 7pc of habitats and 39pc of species listed as needing protection by the EU have a "favourable" status.

It also says that despite the introduction of a drift-net fishing ban, the wild Atlantic salmon is at risk because of water pollution – along with the freshwater pearl mussel and the natterjack toad.

More than 15pc of species of Irish water beetle, butterflies, dragonflies and damselflies are also at risk, while some bat species, otters and the native red squirrel are threatened.

The report blames poor drainage and reclamation of wetlands, badly sited housing, overgrazing, overfishing, pollution and turf cutting for putting creatures at risk.

It says the Government must designate sites containing wildlife, flora and fauna as national heritage areas.

Failing to invest could result in EU fines, and "a reputational cost that would impact on our national green branding".

Other threats include the arrival of alien species such as the zebra mussel, which can reduce the population of native mussel species.

Publication: Northern Standard
Date: Thursday, June 14, 2012
Page: 5
Extract: 1 of 1
Circulation: 13500
Author:
Headline: Integrated Constructed Wetlands

Integrated Constructed Wetlands

Paudge Connolly at the June meeting of Monaghan Co Council asked for an update in relation to the proposal to develop an Integrated Constructed Wetlands project at the Scotch Corner landfill site, to treat leachate from the old and current landfill.

A written reply stated that initial designs for an Integrated Constructed Wetlands on the site of the old landfill had already been prepared, but An Bord Pleanala subsequently determined that an Environmental Impact Statement was required for this proposal.

The reply added: "As an interim solution, works have recently been carried out on site to divert part of the leachate discharge from the old landfill away from an existing watercourse which has been welcomed by the EPA.

"As a long term solution, a decision will have to be made by Monaghan Co Council whether or not to progress with the EIS and subsequently proceed with the ICW at the old landfill to treat leachate on site rather than transportation to Monaghan Waste Water Treatment Plant."

Publication: Irish Examiner
Date: Monday, June 11, 2012
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Extract: 1 of 2
Circulation: 42.083
Author: Richard Collins
Headline: Pair of egrets take to wet weather

Pair of egrets take to wet weather

Richard Collins

ACCORDING to the Meteorological Service, average temperatures here rose by three quarters of a degree in the last 20 years. Our part of the world is getting warmer and wetter. For most wild creatures, this is not good news. Some, however, will benefit from the trend.

Egrets, for example, seem enthusiastic about climate change. At any rate, two species have moved northwards and westwards in recent years. Now a third member of the tribe may be doing the same; it has just been announced that the great white egret has bred for the first time in Britain. The nest is at Shapwick Heath, a Natural England reserve in Somerset.

The great egret is found in every continent apart from Antarctica. In Europe, however, its numbers are low; many of the wetlands it frequented have been drained and the bird was hunted to the brink of extinction for the millinery trade.

The nearest substantial breeding colonies are in Austria and Hungary but birds have been visiting Britain increasingly. They are also coming to Ireland; there is a sighting or two most years.

The Shapwick Heath female is known to ornithologists; she was ringed as a nestling in May 2009 at Besné in France. Having visited Gloucestershire Wales and Lancashire, she settled at the Somerset Levels two years ago.

Last April, local birdwatchers noticed signs of nesting and alerted Natural England and the Royal Society for the Protection of Birds. The site is guarded around the clock. It's impossible to see the nest without disturbing the birds. However, a small chick has been seen.

Great white egrets lay up to five eggs. Incubation starts with the first one, so hatching occurs at two-day intervals; seeing only one chick does not necessarily mean that others won't emerge. Egrets prefer to nest in colonies rather than on their own and they return to the same location each year. Hopes are high that, all going well, this exotic bird will become established in Somerset.

As global warming continues, species which can easily do so may move northwards as their southern haunts become hotter and drier. The egret family seems to bear out this prediction. Little egrets and cattle egrets began breeding in Britain in the last 20 years. The little egret was seen for the first time in Ireland in 1940.

From the late 1950s onwards, there were sightings most years. Then, in 1997, about a dozen pairs nested at a heronry near Youghal. The new arrivals prospered and colonised other locations along the south coast. Egrets, like their cousins the herons, are vulnerable in cold weather; frost and ice can cut off access to the invertebrates they eat. During the hard winters of 2007, 2008 and 2009, it was feared the immigrants and their Irish-born young wouldn't survive but they did. The bird is now found in every coastal county. Nor have the Irish birds lost touch with their roots; a little egret, ringed as a chick in Galway by John Lusby of BirdWatch Ireland, was found in the Azores, 2,100km away. Cattle egrets too are being seen here in increasing numbers. According to the Irish Bird Report, there were 36 records for Cork and 10 for Waterford in 2011.

Telling the various egret species apart, at least in this part of the world, is relatively easy. The little egret, which can be seen on estuaries everywhere, has no dress sense; its garish yellow feet don't match the all-white plumage. The bill and eye, however, are an elegant black. The cattle egret is much rarer in Ireland. Found in wetlands, it visits fields where there are livestock.

Ironically, it's smaller than the little egret. The bill is yellow and the breeding plumage has patches of orange. The great white egret, being much larger, is unmistakable. However, if you visit Florida, you may see a white marsh bird which is much bigger than the great egret. Don't be fooled; this is the great white heron, a 'colour morph' of the great blue heron and not an egret.

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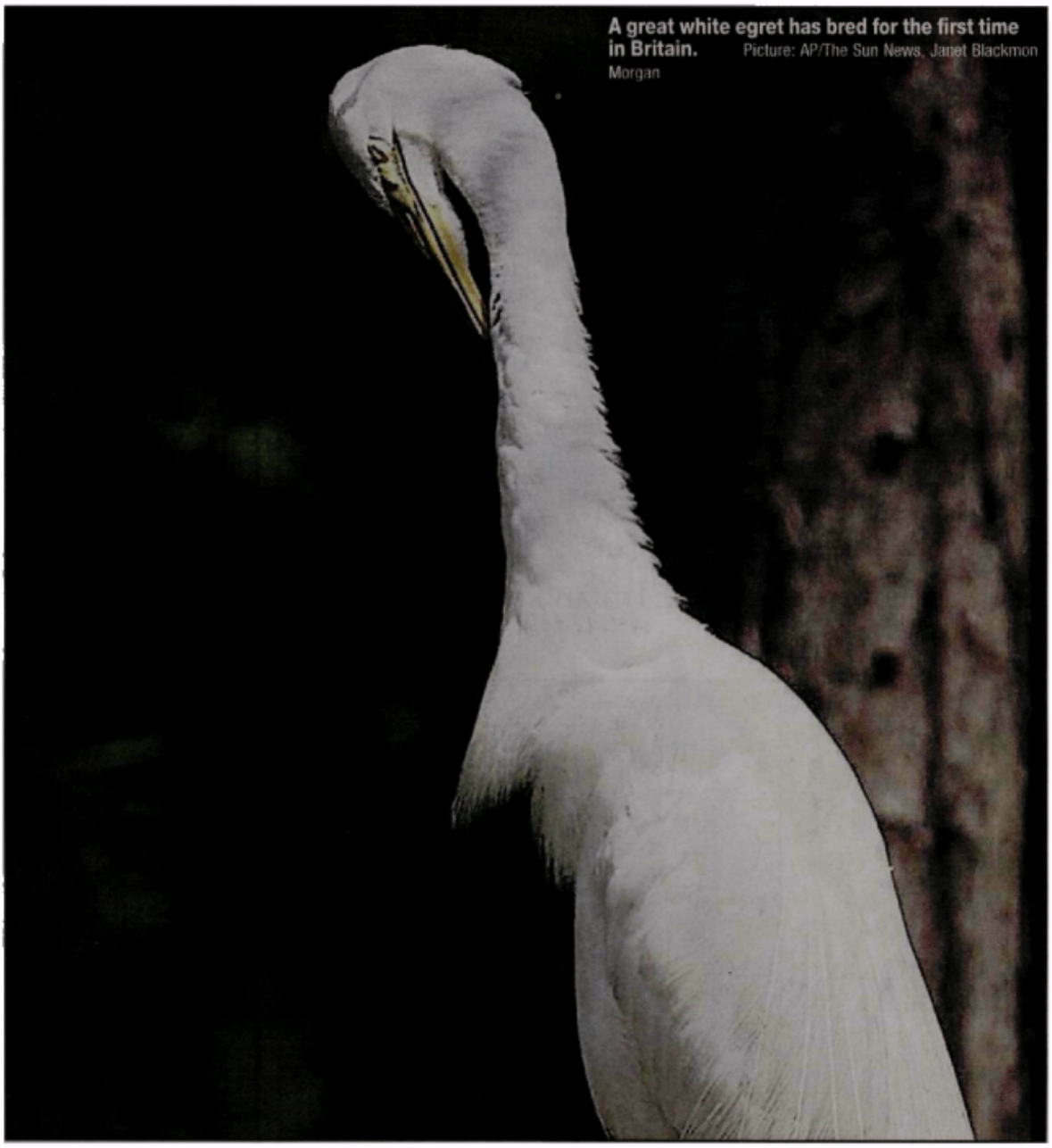
Author: Richard Collins
Headline: Pair of egrets take to wet weather



A great white egret has bred for the first time in Britain. Picture: AP/The Sun News, Janet Blackmon Morgan

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Circulation: 96.150
Author: RONAN McGREEVY
Headline: CLIMATE CHANGE NEW BIRD SPECIES MAY ARRIVE

CLIMATE CHANGE
NEW BIRD SPECIES MAY ARRIVE

CLIMATE CHANGE has the potential to bring 20 new breeding species of birds to Ireland, according to a new book. *Bird Habitats in Ireland* is one of the most comprehensive attempts to date to document the location of the entire bird population in Ireland, ranging from cities to bogs, sea cliffs and wetlands. It features the work of 25 academics and 12 photographers and was launched yesterday at a symposium in the RDS on bird species in Ireland. The chapter on climate change warns that hotter, drier weather could be "very significant" for Ireland's seabird populations off the southwest coast as their food sources move northwards to cooler oceans. Waterbirds and peatlands birds will also be affected by rising temperatures.

RONAN McGREEVY

Publication: Environment & Energy Management
Date: Friday, April 06, 2012
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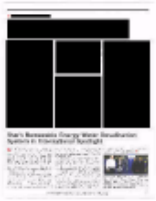
Extract: 1 of 1
Circulation: 10200
Author:
Headline: Europe Needs to Use Water More Efficiently



Europe Needs to Use Water More Efficiently

WATER MANAGEMENT

Europe needs to redouble efforts in using water more efficiently to avoid undermining its economy, according to a new report from the European Environment Agency (EEA). Inefficient water use impacts hard on the resources needed by ecosystems and people, both vital assets for European productivity and security.

The report 'Towards Efficient use of water resources in Europe' makes the case for an integrated water management, starting with better implementation of existing legislation.

Water shortages have severe consequences for economies reliant on agriculture and industry. Some shortages have even led to drinking water restrictions in parts of Europe. There are also indirect effects on the economy, as reduced river flows, falling lake and groundwater levels, and disappearing wetlands can have destructive effects on the natural systems underpinning economic productivity.

Increasingly, there is intense competition for water resources in some parts of Europe. Across the European Union, agriculture uses about a quarter of water diverted from the natural environment, though this can be up to 80% in southern Europe. In addition, public water supply accounts for approximately a fifth of water use across Europe – and over a quarter of this is used just to flush the toilet. Hydropower installations also change the natural structure and flow of rivers and lakes, with consequences for ecosystems.

Agriculture is one sector where easy efficiency gains are possible, because a lot of water is used inefficiently to irrigate crops. Some estimates calculate that approximately a quarter of water abstracted for irrigation in Europe could be saved, just by changing the type of pipe or channel used. Public water supply can be made more effective - as much as 50% of drinking water is lost in some EU Member States.

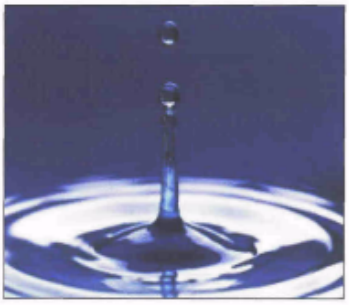
Higher Energy Use

Inefficient use of water also leads to higher energy use, with extra financial and environmental costs, according to the report. While the energy needed to pump and treat freshwater into drinking water is typically around 0.6 kWh/m3, desalination of seawater adds approximately 4 kWh/m3. Several European countries use desalination technology, most notably Spain, which is among the highest users of desalination globally.

Authorities should set clear environmental targets for water use, within the limit of what is sustainable, according to the report. Such targets would differ depending on the available resources, but should be designed so that the natural environment has sufficient water to function. A form of 'decoupling' is needed so that increasing economic productivity does not entail increasing water use and increasing environmental impacts.

Water Prices

Historically, water prices in Europe have rarely reflected the true financial cost of supplying water, nor the economic costs to the environment. This has led to pollution and water scarcity, imposing costs on the environment and society. For example, the general public typically has to pay for the cost of treating drinking water contaminated by agriculture or industry. Putting the right price on water can incentivise more efficient use of water and technological innovation. Effective use of taxes, subsidies, market mechanisms, pricing schemes and other economic instruments can also help balance conflicting demands on water. ■



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Author:
Headline: Wetland system promises cost-effective septic tank upgrades

Wetland system promises cost-effective septic tank upgrades

Don McEntee and Aila Carty explain how integrated constructed wetlands (ICWs) can be utilised for the sustainable and cost-effective upgrade of existing septic tanks and on-site wastewater treatment systems for single houses

The Water Services (Amendment) Bill 2011 requires households with septic tanks and other on-site waste water treatment systems to be inspected and, where necessary, have their systems brought up to required standards. This follows the European Court of Justice judgment (C-188/08) requiring Ireland to register such treatment systems and implement where necessary, effective remedial methods.

Septic tank development

Before the mid-1970s the construction and installation of septic tanks for single houses was rudimentary. Many designs were based on the British Research Establishment guidance (BRE 365), with a major emphasis on the management of effluent through soaks, e.g. septic tank effluent being discharged into an adjacent soak-pit filled with stones or aggregate. The main limitation of this approach was soil permeability and size of the receiving soak-pit. If it filled with effluent, any additional quantity could then flow to the nearest watercourse.

Consequently, in some areas, sites with inadequate percolation have been a source of pollution for surface water. Similarly, in those parts of the country with shallow soils overlying gravels and fractured rock with excessively fast percolation, wastewater or septic tank effluent could be a source of pollution for groundwater (EPA, 2010).

Since the mid-1970s, more consideration was given to the design, construction and location of septic tanks and their effluent. Septic tank effluent was then usually directed to a constructed percolation area consisting of a distribution pipe network with a stone-aggregate diffusion area. The required area for percolation, including an alternate percolation area, had to be provided. Notwithstanding such improvements, with required prior site assessment and planning permission, it is generally accepted that such work and the associated site assessment may have been deficient. In some cases these deficiencies resulted in ponding, foul odours, unsightly conditions or poor hygiene, which some householders tried to minimise by diverting the discharge to local ditches, streams and rivers. These problems were exacerbated where clusters of dwellings occurred.

In the last 10-15 years, where septic tank and percolation was deemed inadequate, other treatment systems, typically electro/mechanical (E/M) systems, have been seen as appropriate. Here too, certain deficiencies in the management of such systems have arisen An alternative approach to E/M conventional wastewater treatment has been the use of constructed wetlands (Vymazal et al, 2006; Knight et al, 2000). Of the many concepts and designs for such systems, one that has been successfully deployed in Ireland over the past 15 years is the ICW concept.

ICW systems

ICW systems were developed to treat a range of wastewaters including domestic wastewaters (and septic tank effluent), and to comprehensively address water pollution through the provision of

Publication: Engineers Journal
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Page: 73
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enhanced ecological and wetland ecosystem services by reanimating a specific wetland infrastructure (Harrington et al. 2005). The main functional features of these ICW systems are their shallow water depth (typically 100-200mm), dense emergent vegetation (helophytic macrophytes), sequential flow through a series of wetland cells and the use of on-site materials (local soils) and topography. ICW systems utilise the same biogeochemical structures and processes that exist universally in similar natural wetlands that support comparable or greater microbial activities than that incorporated into most conventional treatment facilities (Scholz et al. 2007 and Harrington et al. 2011). The Department of Environment, Community and Local Government's (DoECLG) Water Services Investment Programme 2010-2012 states that "integrated constructed wetlands will play a role in providing improved wastewater treatment facilities particularly in smaller rural locations". In December 2010, the DoECLG published a guidance document for ICW that addressed farmyard soiled water and domestic wastewaters. A guidance document is expected to specifically address ICW for the treatment of domestic wastewaters from single dwellings.

Since the publication of the guidance document, local authorities have been encouraged to use these ICW systems. At present there are a number of ICWs dealing with the discharges from towns, villages and housing developments, including Glaslough in Co. Monaghan, Dunhill and Kill in Co. Waterford, Rossbeigh and Brandon in Co. Kerry, Clogh in Co. Laois and, shortly, Clonaslee also in Co. Laois. There are also a number of ICW systems dealing with the discharges from septic tanks serving single houses in the southern part of the country. Site observations indicate that these systems operate mostly with no surface discharges and there has been no indication of pollution to groundwater. Observations and monitoring of these systems are ongoing.

ICW systems require much lower capital investment (typically 50-80 per cent less) and are more economical to maintain and operate than other conventional treatment systems (typically 80-90 per cent less). While land area for an ICW may be larger than other on-site treatment systems, they provide important additional values such as enhanced biodiversity and recreation. The high rate of removal of key parameters, such as ammonia-nitrogen and phosphorus (typically 96-99 per cent), at Glaslough (Doody et al, 2009) have resulted in a year-round, consistently good effluent quality. The ICW design applied to treat wastewaters from dwelling conurbations such as Glaslough (population 1750), as per DoECLG guidance, can also be applied to single-house systems. The systems can be a new or retro-fitted method of choice to provide efficient, cost-effective and low maintenance wastewater treatment for most individual rural dwellings. Permission may be granted for retrofitting an ICW by a local authority or the new national water authority, if undertaken by a competent person. An ICW can be incorporated into the curtilage of a property; typically within its garden, provided there is sufficient area and an appropriate landscape. It may be designed to manage all domestic wastewaters, sewage and grey-water, and runoff from the dwelling. Discharges from on-site septic tanks can be gravity- fed or pumped to an ICW depending on site conditions and location (Figure 1). The systems can be used as an alternative to conventional systems and are especially suited to situations where the potential rates of percolation through the underlying soil are low. Generally, where site assessments fail sites for poor percolation (T value >50 [EPA,2009], the T value is the average time in minutes for a fall of 25mm in the elevation of water in a 0.3m square hole within the limits of 300 and 200mm heights of water in the percolation hole [Mulqueen and Rodgers, 2001]) and the use of E/M conventional systems are not deemed appropriate, an ICW may be suitable.

Enhancing amenity value

Their integrated design will generally improve the garden's amenity value, natural habitat and aesthetic values. These values will depend on how the ICW is positioned, laid out and landscaped. Curvilinear shaped ponds, with gently sloping embankments to the water's edge and a diversity of emergent vegetation will help achieve these results. While the initial cell may need to be fenced or have access to it restricted through the use of appropriate hedging

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Page: 73
Extract: 3 of 6
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the remaining area of the ICW can provide a new attractive feature in the garden. There are a few key requirements for the design and construction of an ICW for a domestic dwelling, namely that there are suitable site conditions, sufficient area and that the necessary distances between the ICW and the dwelling, water supplies (private and public) and surface waters can be achieved.

Particular requirements are that the on-site soils are of low permeability, or can be engineered to be so, and of sufficient depth (as per DoECLG guidance document). It is essential the ICW will not have adverse impact on the receiving and adjacent aquatic and terrestrial environment.

The area of the ICW will depend on the maximum number of people in the dwelling, the topography of the site (steeper sites generally require more area than flat ground) and whether there is to be a surface water discharge which will require licensing. These requirements necessitate a detailed site assessment and specific ICW design for each site, in accordance with the DoECLG Guidance Document. The ICW is generally comprised of two to four cells operating in series and are planted with a range of emergent species to achieve a dense vegetation cover. Each pond is typically of similar area. However, the number, size and shape of each pond will depend on the site conditions. The minimum area of ICW required for a dwelling (housing five people) is 100m² (functional area). This area is similar to that required for a percolation bed (Figure 2). In the EPA's 2009 Code of Practice 'Wastewater Treatment and Disposal Systems Serving Single Houses' Section 8.6 deals with constructed wetlands. In Table 8.3, the area required for a soil-based constructed wetland is 20m² per population equivalent. This is the same treatment area mentioned in the new DoECLG ICW guidance document.

Site assessment

The development of an ICW requires a detailed site assessment (topographical survey, site/soil investigation and desk study), detailed design, permission, discharge licence (if there is discharge to surface waters), construction, landscaping and a maintenance strategy. Discharges from an ICW can be eliminated through appropriate sizing and vegetation, thereby obviating the need for a licence. Discharges from an ICW can be made to ground by increasing the overall wetland area, providing deeper and more seasonal hydrated final cells or by planting trees at the end of the system. There are areas around the country where planning permission was inappropriately given to develop dwellings and septic tank systems on relatively small sites (less than 0.4 acres). Many of these sites are clustered together especially on the outskirts of towns and villages. This means that, regardless of the level of treatment, the householder may not be able to retain the discharge from a septic tank within the site's boundary. In some areas it is known that clusters of septic tanks are causing local problems.

The solution to this type of scenario is a local disposal system. With the successes of the ICW concept, it would be possible to set up a group sewerage scheme to treat the septic tank of each household. The effluent from the septic tank could be pumped or fall by gravity to a local sewerage main and discharged to a communal ICW (Figure 3). Like all wastewater treatment systems ICWs require maintenance, however these systems are largely self-managing and maintenance needs are minimal. ICWs are considerably less expensive to maintain and operate, especially where pumping is not required (Doody, et. al., 2009). The main maintenance procedures are typically the management of embankment top surfaces and the prevention of priority water flow through the cells by maintaining the appropriate water level. The emergent vegetation within an ICW provides the essential support structure for the microbial treatment processes and the hydraulic impedance necessary for sedimentation and enhanced water balance including the elimination of a discharge. This vegetation system provides other important ecosystem services such as carbon sequestration, and aesthetic and biodiversity values. There is a diverse range of native emergent plant species that may be used in ICW systems. These include irises, sedges, rushes, reeds and water lilies. There are also many non-invasive decorative species of plants that could be included to complement an existing garden. In addition, a range of trees and shrubs may be used to complement the overall landscape. Given the past laxity in ensuring that domestic wastewater was appropriately treated, it is hoped that local authorities and the Government will take a positive role in assisting householders in addressing domestic wastewater in problem areas. Consideration should be given to the practicalities of execution of remedial works especially in providing practical and affordable solutions such as the use of ICW systems, tailored to the particular set of circumstances. This will require experienced technical and professional engineering inputs, and that the inspection and evaluation of existing systems be applied with the necessary understanding. While ICW systems can provide effective solutions in the sustainable management of domestic wastewater, they can also simultaneously deliver a wide range of other benefits. The Ramsar Convention serves to protect all kinds of wetlands, not just those designated for special protection. It recognises the benefits and role of constructed wetlands and the Convention Secretary's Annual report for 2011 drew attention to the beneficial role that ICW systems could play. Importantly, this relevance includes the various innovative ICWs built to clean not only sewage and soiled water from domestic dwellings but also from villages, farmyards and agricultural lands. Further details on ICWs can be found on the Vesi Environmental website: http://vesienviro.com/

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Don McEntee Chartered Engineer, BE, MEngSc, MIEI, MICE, worked as a structural and highways engineer with consultants from 1967 to 1978 in Ireland, Canada, Zambia, Tanzania and Nigeria. From 1978 to 1984 he was head of design with a property development company in Dublin. From 1984 to his retirement in 2009 he was in charge of major drainage projects in Dublin County Council and Dublin City Council including project manager of the Greater Dublin Strategic Drainage Study and implementation of flood alleviation works on the Tolka and the Dodder rivers. Don retired in August 2009. He has a continuing involvement in sustainable drainage systems and ICW.

Aila Carty, Director of Vesi Environmental Ltd. BSc (Hons), HDip EIA Mgmt. Aila Carty has been involved in the development and application of Integrated Constructed Wetlands (ICW) for over 10 years. She has worked on many aspects of ICW development including site assessment, design, landscaping, construction and maintenance. Aila has been involved in a wide range of ICW applications from single house projects to industrial-scale projects several hectares in size.

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Wetlands and Natural Resource Management. Ecological Studies. Volume 190, Section II, 69-96.

The Water and Environmental society, Engineers Ireland in collaboration with The Institution of Civil Engineers, Republic of Ireland Region are holding an evening lecture titled 'The use of integrated constructed wetland for the upgrade of existing septic tank and on-site wastewater treatment systems for single houses'.
Speakers are Aila Carty, Rory Harrington and Don McEntee.
Date: Monday, March 26, 2012.
Time: 6.30pm.
Venue: 22 Clyde Road, Dublin.

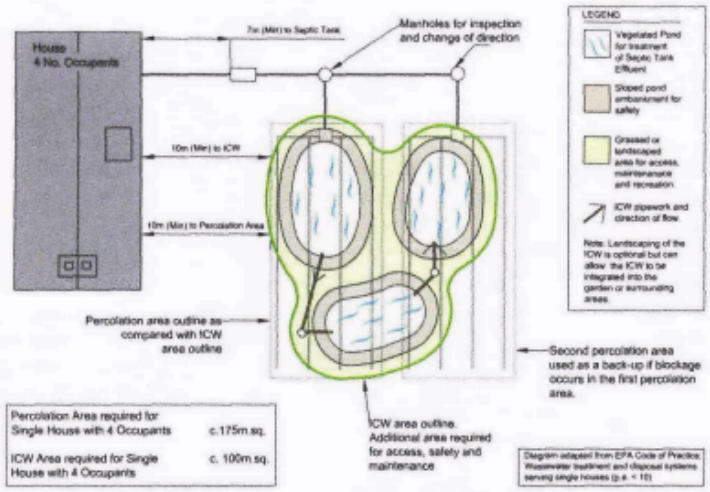


Figure 2. ICW vs. Percolation bed.

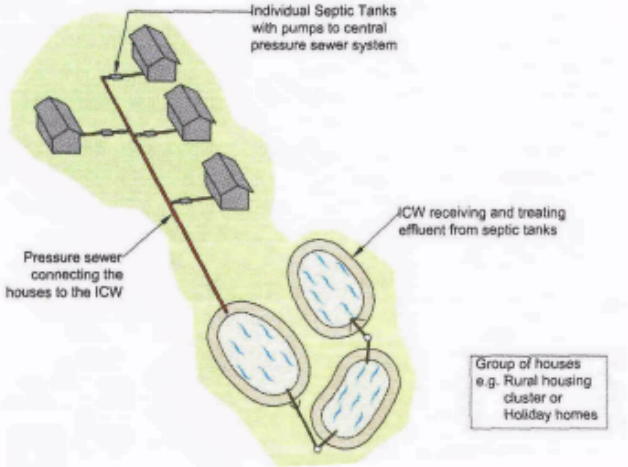
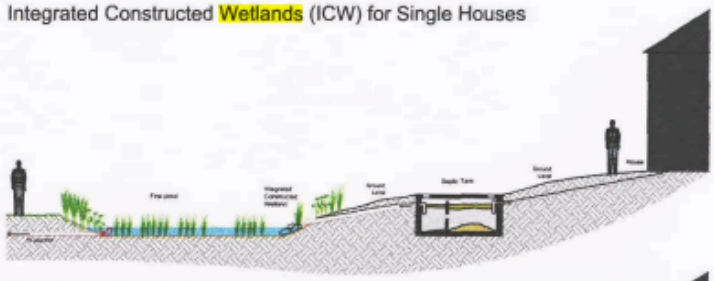
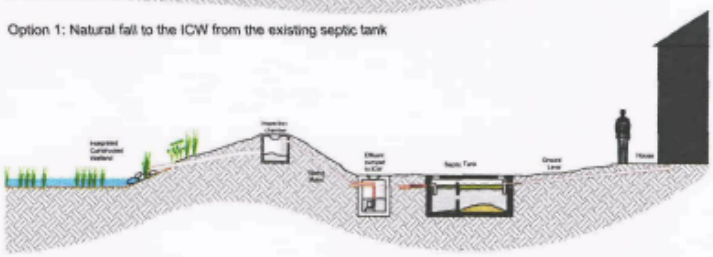


Figure 3. ICW for multiple houses with septic tank connected to pressure sewer.

Publication: Engineers Journal
Date: Thursday, March 15, 2012
Page: 73
Extract: 6 of 6
Circulation: 18.500
Author:
Headline: Wetland system promises cost-effective septic tank upgrades



Option 1: Natural fall to the ICW from the existing septic tank



Option 2: Where levels are not favourable, septic tank effluent can be pumped to the ICW

Figure 1. Schematic view of an ICW system in place for a single dwelling.

Publication: Veterinary Ireland Journal
Date: Tuesday, March 06, 2012
Page: 118
Extract: 1 of 1
Circulation: 2.500
Author:
Headline: Find that newt

Find that newt

Ireland has only three species of native amphibian: the common frog, the Natterjack toad and the smooth newt. However, while newts are commonly found in Ireland the Irish Wildlife Trust could not find newts in Donegal, Leitrim, Tipperary, Limerick, Kilkenny, Louth, Laois, Kildare and Carlow.

In 2011, the Irish Wildlife Trust (IWT) National Newt survey continued to reveal some of the secrets of the smooth newt in Ireland. Starting with a pilot project in 2010, the IWT survey is the first comprehensive attempt to study the distribution of this native amphibian in Ireland.

Being an amphibian, the smooth newt depends on healthy wetland habitats for its life cycle. Wetlands are vital for people too, cleaning and storing water, storing carbon to mitigate climate change, alleviating flooding and enhancing valuable amenity and tourist areas.

The survey has been carried out with the help of Dublin Zoo and Fota Wildlife Park and the IWT is grateful for their continued support. Crucially the IWT also relies on a small army of volunteer 'citizen scientists'. These enthusiastic naturalists are providing real scientific data that is promoting conservation in Ireland. Newt survey coordinator, Dr Daniel Buckley stated: "This survey has opened Irish people's eyes to these fascinating little 'water dragons' and their mysterious way of life. Public assisted surveys like this help us make a connection between people and nature and that is how we are going to protect our natural heritage in the long run."

The survey will continue in 2012 and will be calling on members and volunteers to once again get out and search their local pond for newts. Training days will be taking place around the country in March. Places are limited so book early to avoid disappointment. To register as a surveyor or for more information contact Dr Daniel Buckley at newts@iwt.ie or on 086 369 1982 or check out our website www.iwt.ie

Publication: Inshore Ireland
Date: Wednesday, February 29, 2012
Page: 6
Extract: 1 of 4
Circulation: 36.000
Author: Karin Dubsky
Headline: Ireland's green image blackened by loss of wetlands

Ireland's green image blackened by loss of wetlands

Karin Dubsky,
Coastwatch

As everyone knows, Ireland gets a lot of rain which makes the landscape very lush and green. This matches the green image we want to portray. Bord Bia too draws heavily on this image, with the best meat produced from cattle that graze outdoors nearly all year round.

Notwithstanding this, when you look at how we fare using other environmental indicators such as shellfish water quality; timely implementation of water pollution control legislation or designation, and management of Natura sites, our image is less green. Indeed, have you ever tried to relate the number of pigs seen outside with Irish pork steaks in supermarkets?

Ireland's record of breaches in environmental laws set down by the European Court of Justice is another warning that green image and reality need to be better synchronised. Until very recently, an unresolved ECJ ruling on wetlands looked like landing us with daily fines, not least due to woefully inadequate wetland protection law. Thankfully changes were finally implemented, in the form of two separate statutory instruments each with its own legally binding guidance document.

WETLANDS

The definition of wetlands found in the Ramsar Convention (www.ramsar.org) and also adopted in EC literature is:

'Areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres.'

Ramsar information then sets out a long list of wetland types with a definition and guidance on each. Our estuaries, reed beds, ponds and ditches, valley fens with bulrushes, which are now popping up new shoots, are all wetlands.

A recent survey of wetland types in Wicklow carried out for Wicklow County Council, identified 34 types!

NEW WETLAND PROTECTION LAW

New farm regulations S.I. No. 456/2011 — European Communities (Environmental Impact Assessment) (Agriculture) Regulations 2011 set out to protect wetland habitats. They also cater for the farmer's need to deal with water logging problems on agricultural land.

For example, a farmer can address a wet patch or blocked drains in his barley field as before; however he/she must seek planning permission to infill a pond, in that field, or an adjacent marsh as these are wetland habitats protected under the new planning S.I. No. 454/2011 — Planning and Development (Amendment) (No. 2) Regulations 2011.

In addition to the above there are extra requirements when works might affect a protected site or species and if it is above a threshold size. There is also a screening provision whereby farmers can request an official check as to whether works can go ahead or may need planning permission or an environmental impact assessment.

The aim of the two regulations is to preserve wetland quality and avoid loss. In essence, this new law, in addition to other regulation, should enable the sustainable use of wetlands.

My concerns around our wetlands now are threefold.

Firstly, we have decades of passionate and widespread belief that it is justified to infill, drain, or cut away wetlands especially bogs, small ponds, parts of flood plains. These practices won't change, simply by bringing in new laws.

Secondly, when wetlands are infilled or drained illegally, authorities may halt it; however restoration of wetland functions is rare.

Thirdly, by casually losing such wealth and beauty we are undermining our own green image and thereby job opportunities in the food and tourism sectors and render the land increasingly vulnerable to flooding.

Let me spell this out. We still have land owners including local authorities who are infilling wetlands. There is a lack of transparency regarding the screening process in the Agricultural SI that is driven by the desire to produce more food. Given the reduction in enforcement staff and the lack of reward for farmers who have top quality wetlands, this creates a significant danger of further wetland loss rather than an improvement in the status of wetlands.

For the coastal *Inshore Ireland* reader that could mean the risk of pollution bleeps and

Publication: Inshore Ireland
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Page: 6
Extract: 2 of 4
Circulation: 36.000
Author: Karin Dubsky
Headline: Ireland's green image blackened by loss of wetlands

eutrophication of local bathing or shellfish waters increasing.

My call is that in spite of financial constraints, we need to address these concerns fast. Hopefully we have come far enough as a nation and now have the right leadership and networking in place.

At the recent 'wetlands of international importance' poster launch for example, Minister Jimmy Deenihan was so committed to wetlands that everyone there felt lifted.

SO WHAT IS NEEDED?

Accessible information, including a national wetland inventory along with education/ training to enable wise and decisive protective action.

Wetland restoration. The short film by Éamon de Buitléar shown on World Wetland Day of the life brought back to a canalised stream at Annestown Co Waterford once its bed and soft edge were reinstated, demonstrates how results can be achieved in some wetland types.

CHERISH AND IMPROVE OUR WETLAND STOCKS AND THE JOBS THEY SUPPORT

In the current climate of job shortages, wetlands themselves could help deliver many more jobs than they are currently supporting. Take the interplay of tourism, the fishing industry, recreation and farming sector for example. If carefully handled, each could support and reinforce the green quality image of the other.

If visitors could see cattle grazing outdoors at the right density; water full of fish, shellfish that can be sold as caught or after minimal local depuration; restaurants and markets with a wide range of the finest wild and grown food, they will not only rave about Ireland but by word of mouth help bolster Irish products on the global market.

If on the other hand however the tourist meets a bulldozer lovingly pushing demotion waste into a wetland, or bog sausage machines in full flight, or counts the number of signs warning that streams on bathing beaches are too polluted for children to play in, then these eco-tourists will spread another kind of message...

The Ramsar Convention has a tourism and recreation theme for 2012 and we in Ireland have the opportunity to showcase our wetlands on that world website, and to the ecotourism companies that are working with Ramsar this year.

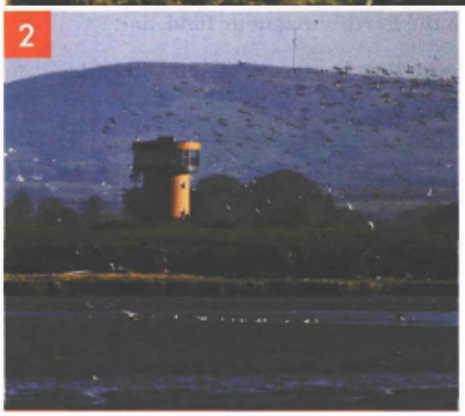
In addition, representatives of the 160 country 'Ramsar family' gather every three years for an international meeting, which many combine with a holiday. This time the Ramsar COP is in Europe (Romania) and Ireland could attract some of the business…

We could guide visitors towards our stunning wetlands and Ramsar sites, intertidal mudflat areas with sea grass beds and a rocky shore edge full of edible life? But how do you prepare them for other sights (see photos of Dungarvan and Youghal) if they do come across them?

Publication: Inshore Ireland
Date: Wednesday, February 29, 2012
Page: 6
Extract: 3 of 4
Circulation: 36.000
Author: Karin Dubsky
Headline: Ireland's green image blackened by loss of wetlands

1 - 3 *Tralee* - Ramsar site and SPA, taken on World Wetland Day. Photos Tim Smith

4 - 5 *Dungarvan* - Fresh infill of reed bed beside Dungarvan harbour SPA and Ramsar site *Youghal* - Slob lands being infilled; see earth and stones and further to the right is mixed waste dumped last year which has settled and is now used for tar and stone storage. Photos K Dubsky



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Date: Wednesday, February 29, 2012
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Circulation: 36.000
Author: Karin Dubsky
Headline: Ireland's green image blackened by loss of wetlands

Jimmy Deenihan, Minister for Arts, Heritage and Gaeltacht Affairs launches the Irish Ramsar Wetland Poster on the steps of the Tralee Wetland centre which is due to open shortly

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Date: Monday, February 13, 2012
Page: 16
Extract: 1 of 1
Circulation: 43.390
Author: Donal Hickey
Headline: Wetlands solution to waste problem

Wetlands solution to waste problem

Donal Hickey

OPPOSITION politicians are having a field day with the septic tank issue in rural Ireland, gladly joining protesters who are packing village halls in their hundreds to rail against the €50 fee for tank inspections.

Yet, some of the same politicians were part of the previous Fianna Fáil/PD Government which openly recognised the need for regulation in an area that has serious implications for public health, especially in regard to drinking water which poorly functioning septic tanks can poison.

In some cases, up to 57% of ground water samples are contaminated by human waste, according to state agencies.

As chairman of Joint Committee on Heritage, Environment and Local Government, Fianna Fáil Deputy Sean Fleming, accepted the lack of regulation of wastewater services was "highly unsatisfactory", while Environment Minister John Gormley intended implementing the recommendations in the joint committee's report.

Objectors are largely focussed on the cost to householders of rectifying their septic tanks, rather than coming up with solutions. So, you could say it's time for a bit of thinking outside the tank. For, there are other ways of treating human and animal waste, which are working in different parts of Ireland.

We have about 400,000 septic tanks, with 300,000 being the traditional variety — basically, brick-lined holes in the ground into which discharges from toilets in a house are flushed. Often, the tanks were just slapped up and not properly sealed.

A septic tank is defined as a small sewage treatment system in areas with no connection to main sewers, but many do not "treat". Between 250,000 and 300,000 septic tanks are not working as intended: they overflow and seep into watercourses, as numerous reports have highlighted.

In 2009, the Government was taken to the European Court of Justice for not doing its job in relation to septic tanks and percolation areas. In May 2011, the EU had us in court again, with a €2.7m fine and a daily penalty of €26,000 still hanging over us.

The proliferation of one-off houses during the boom years greatly added to the number of septic tanks. There is an alternative, however, even if all septic tanks cannot be replaced.

UCC doctorate student Fergus McAuliffe believes constructed wetlands can go some of the way. With wetlands, waste is pumped into a receiving pond: after that, it flows by gravity through number of vegetated ponds. As it slowly flows through the ponds, the waste is treated by plants and other organisms and is eventually discharged as clear water into a river or stream.

The system is already working successfully in parts of counties Monaghan and Waterford and Kerry County Council has two pilot schemes underway.

Treatment levels are very good, with up to 95% removal of organic matter, and running costs are quite low, according to Mr McAuliffe, of the School of Biological, Earth and Environmental Science, UCC.

He also points to downsides, including lower temperatures in winter which slow the treatment process. Also, the liquid discharging from the wetlands needs to be monitored. That would cost — a cost which has hampered the spread of wetlands. However, he emphasises, the biggest issue is the large amount of ground that's needed for the wetlands — often as much as that taken up by a house itself. Many house sites simply don't have the space.

Writing in The Boolean, he hopes his research will also find a way of reducing the amount of ground that's needed by the average homeowner for a wetlands system.

Funding is a key issue in the septic tank controversy. People dread being faced with bills for thousands of euro to upgrade, or replace, the tanks with modern facilities. Given that we are obliged to enforce EU laws, a strong argument can be made for EU money to remedy the situation. Indeed, could we not have grant-aided, small wetlands schemes, similar to group water schemes? Many villages around the country are deficient in waste treatment services and wetlands offer a solution. Glaslough in Co Monaghan has a wetlands scheme catering for a 700-population, but designed for two and half times that number.

Supported by the Department of the Environment, the Glaslough project provides three times the capacity of a traditional sewage scheme at half the price. What's more, the wetlands have also become a public amenity with horse riding trails.

In the Anne Valley, Co Waterford, constructed wetlands have been used since the 1990's to treat farm run-off, while the village of Dunhill also uses the system. Water quality in a stream running through the valley has hugely improved and, reportedly, sea trout are returning to it.

Large quantities of liquid waste from the Kilmeaden food plant, in Co Waterford, are also being treated in 10-hectare wetlands site. In Co Kerry, a sewage problem in the popular Rossbeigh beach area is being similarly resolved, with Kerry County Council's director of environmental services Oliver Ring saying: "We see constructed wetlands as the best solution for small communities."

Publication: Tipperary Star
Date: Thursday, February 09, 2012
Page: 4
Extract: 1 of 1
Circulation: 7898
Author:
Headline: Discover The Importance Of Wetland Habitats

Discover The Importance Of Wetland Habitats

Cabragh Wetlands

There was a modest but keen turnout at Cabragh Wetlands on Sunday for a look at the importance of wetland habitats locally and internationally. Hosted by the recently launched Tipperary branch of the Irish Wildlife Trust (IWT), we were given an introduction to the important Ramsar Convention, signed by 160 countries, which recognizes the key role played by wetland habitats, be they vast coastal waterways, protective mangrove swamps, saline or freshwater, permanent lakes and bogs or seasonal floods plains. From the vast coastal bogs of western Ireland to the small local sites like Cabragh, all link up to play their part in ensuring the healthy balance of life.

Touch wood, we are well beyond the stage when otherwise rational people would dismiss areas like Cabragh as unimportant and suitable only for "development". Wetlands play a huge role in controlling floods – Holycross could have expected far worse water damage in recent years if Cabragh wetlands were not available to do their job of soaking up the excess water racing down the hills and into the Suir, holding the floods until the rain stops and river levels drop in spring. Wetlands help reduce pollution by filtering water through the roots and tubers of native plants like reed mace, bulrushes and yellow flag iris. Carbon dioxide is stored safely in water-logged peat bogs, which could easily become significant sources of gas that would add to global warming and climate change if they were "improved" by draining and allowed to dry out.

Evidence from the Pacific and Indian Oceans following the tsunamis of the last decade show that areas of countries like Sri Lanka, India and Burma which had preserved their natural coastal mangrove swamps, suffered far less tidal wave damage than regions which had destroyed the mangrove for the dubious and short-term economic benefits of roads, hotels and housing to sustain growing tourism. The trees, waterways and flood plains of the mangrove swamps were able to absorb the bulk of the inundation from the tsunamis and act as a counter-balance to their destructiveness.

Wetlands are areas of biodiversity, supporting a range of plants, birds, insects and mammals that are all well adapted to their local habitat and which flourish because they sustain and support each other, linked together in a complex web. If you damage one part of the web, the links that bind species together will weaken and populations will suffer, further undermining the integrity of the whole.

The IWT reminded us on Sunday that our traditional rural ponds are in danger, with many filled in by farmers and "developers", and others damaged by inappropriate use of chemicals and dumping of domestic waste. Over the last century something like 90% have disappeared, and the sad trend continues. Apparently just four healthy ponds within a square kilometre will be sufficient to provide a network of safe havens for populations of insects and plants to survive and flourish, able to interbreed with other colonies in other ponds nearby to ensure genetic diversity and replacements if one population should come under pressure.

There is an important area of research to be done here – to record and map rural ponds, and steadily investigate the wildlife status of each. No doubt there are plenty of people out there who have vital knowledge about their local ponds, and the IWT with its county-based structure would be a good organization to take a leading role in gathering data. There is good work to be done at primary and secondary levels in geography and science classes in mapping ponds and recording local knowledge and folklore about them. Cabragh Wetlands Trust will be glad to act as a repository for any information gathered.

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Date: Tuesday, February 07, 2012
Page: 5
Extract: 1 of 1
Circulation: 38.700
Author:
Headline: Wicklow kicks off Wetland Day celebrations

Wicklow kicks off Wetland Day celebrations

The first event of Word Wetland Day 2012 was hosted last week by Wicklow County Council. Wicklow County Council Cathaoirleach, Cllr Sylvester Burke welcomed Eamon de Buitléar and members of the Irish Ramsar Wetlands Committee celebrate the event last Thursday.

The event included the launch of a new website on Irish Wetlands and showed selected film footage from Eamon de Buitléar. The Heritage Office of Wicklow County Council has been involved in undertaking a number of initiatives in relation to Wetlands in county Wicklow which will be highlighted as part of this year's theme "Wetlands - Leisure and Tourism", among them a new website www.wicklowcoast.com in association with Wicklow County Tourism.

Wetland Tourism held a series of free events where the public could celebrate, discover, audit and taste the fruits of wetlands.

"As we are looking to tourism as a source of job creation in Ireland, let us make the best use of this suitably named tourism and recreation year", said Karin Dubsky, chair of the Irish Ramsar Wetlands Committee.

"Our new website, www.irishwetlands.ie, is aimed at nature and outdoor recreation enthusiasts. It will showcase our wealth of wetlands, creatures using them, recreational and wild food offers, contain guidance of what to avoid and wetland law. We hope to attract the eco and health aware visitors who will be coming to Europe this year for both the 3 yearly World Ramsar meeting and the Olympics."

Pictured are Noel Keyes, Chairperson Wicklow Heritage Forum, Karin Dubsky, Chairperson Irish Ramsar Wetlands Committee, Shirely Clerkin Heritage Officer Monaghan County Council, Sylverster Bourke Cathaoirleach Wicklow County Council, Deirdre Burns Heritage Officer Wicklow County Council, Eamon de Buitlear (Special Guest) Eddie Sheehy Wicklow County Manager, Tadhg O'Mahony from the EPA at the launch at County Buildings of Irish Ramsar World Wetlands Day and also the launch of a new Irish Wetlands Website. Photo Ann Egan

Publication: Irish Times
Date: Friday, January 20, 2012
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Extract: 1 of 3
Circulation: 100.951
Author: EOIN BURKE-KENNEDY
Headline: Modem practices push farmland birds to brink of extinction

Modern practices push farmland birds to brink of extinction

The *Atlas* project is the most comprehensive survey on bird life in more than two decades

EOIN BURKE-KENNEDY

PREVIOUSLY COMMON farmland birds such as the corncrake, curlew and yellowhammer are now perilously close to extinction in Ireland, according to a four-year study of the island's bird populations.

Preliminary data from the *Bird Atlas 2007-2011* survey, which concludes at the end of the month, also indicate an alarming fall-off in summer migrants such as the cuckoo, combined with a sharp rise in buzzard numbers and the re-emergence of woodpeckers after centuries of absence.

The *Atlas* project, which aims to map all of Ireland and Britain's 578 bird species, is the most comprehensive survey of bird life undertaken on these islands in more than two decades and will inform conservation policy for decades to come.

Crucially for ornithologists, it provides the clearest picture yet of how bird populations in Ireland, in terms of density and diversity, are being affected by climate change and more intensive farming practices.

The survey, which is being jointly co-ordinated by BirdWatch Ireland, the British Trust for Ornithology and the Scottish Ornithologists Club, highlights a remarkable decline in some of Ireland's most emblematic farmland birds, such as the corncrake and the curlew.

The corncrake, whose distinctive cry used to be the bane of sleepless farmers, has seen its breeding population plummet by more than 80 per cent in the past 20 years alone.

The birds, which were breeding in every county in Ireland until the 1970s, have been a victim of the move from traditional hay-cutting to silage production, which has wiped out their traditional hay-meadow habitat.

Breeding populations of curlew are following a similar trajectory, down 60 per cent, as a result of the drive to reclaim more of the Republic's wetlands for agriculture.

Other waders which have suffered declines as a result of the draining include the snipe, lapwing and red shank. "Unless significant conservation efforts to save these farmland birds are undertaken there is no reason why they won't disappear," said Brian Caffrey, BirdWatch Ireland's *Atlas* co-ordinator.

One farmland bird which has already become extinct here is the corn bunting.

The small, streaked, grey-brown bird, often associated with hay meadows, was recorded in modest numbers in the previous 1988-1991 *Atlas* survey but has since fallen off the radar.

Its demise is also linked to more intensive farming practices, including the increased use of fertiliser and pesticides, which is thought to have deprived the bird of its food supply of weed seeds.

Another victim of the shifting patterns of agriculture, in this case the switch from tillage to pasture, is the yellowhammer.

The small seed-eating bird with its distinctive yellow plumage, which is found mainly in arable areas, has seen its numbers drop by more than 40 per cent in the past 20 years. It is now largely confined to a few counties in Leinster where arable farming is still practised.

Perhaps the most positive news from the survey is the great spotted woodpecker's re-emergence. The birds, which became extinct in Ireland after widespread woodland clearances of the 17th and 18th centuries, have been spotted recently in several counties across Leinster.

The fledgling population, part of a natural overspill from Britain, is thought to number in the region of 50 pairs.

The survey also charts the remarkable comeback of the buzzard. Hunted to the brink of extinction in previous centuries, the broad-winged bird of prey is now thriving across the country thanks to more awareness and less persecution.

"When the data is validated, we're going to see a striking change in the map for the buzzard," Mr Caffery said.

Significantly, the research reveals the extent to which climate change is affecting some of Ireland's seasonal migrants.

The most high-profile casualty has been the cuckoo (down 30 per cent), which appear not to be migrating here from sub-Saharan Africa in the same numbers.

Ornithologists believe that desertification, in particular the expansion of the Sahara which is expanding southward at a rate of 48km a year, is making the arduous 7,000km migration more and more hazardous for the birds.

Climate change is also thought to be behind a sharp fall-off in the number of bewick's swans wintering in Ireland.

The birds, distinguishable from the more common mute swan by their yellow beaks, travel from Siberia to winter here. However, rising temperatures have prompted the birds to cut short their annual journey westward, stopping off in more easterly

Publication: Irish Times
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Author: EOIN BURKE-KENNEDY
Headline: Modem practices push farmland birds to brink of extinction

locations on mainland Europe.

One of the most conspicuous signs of global warming has been the recent invasion of little egrets.

The small white herons, which are steadily colonising the southern half of the country, were not recorded in the previous survey.

The rising temperatures have also seen an influx in warblers such as the blackcap, a rarity even 20 years ago, but now commonly found in back gardens.

According to Mr Caffery, blackcaps, which have one of the most distinctive songs, are not only migrating here in greater numbers from Africa during summer but are staying on through the winter as well on account of the milder temperatures.

The survey also recorded an upsurge in ravens, an upland bird which feeds mainly on carrion.

The closing date for records to be submitted to the survey's co-ordinators is January 31st.

BirdWatch Ireland is still asking the 2,500 Irish volunteers who have taken part in the survey and to members of the public to send in their sightings.

Of particular interest to researchers are sightings of reclusive species like the barn owl and the long-eared owl, whose numbers have traditionally been hard to assess.

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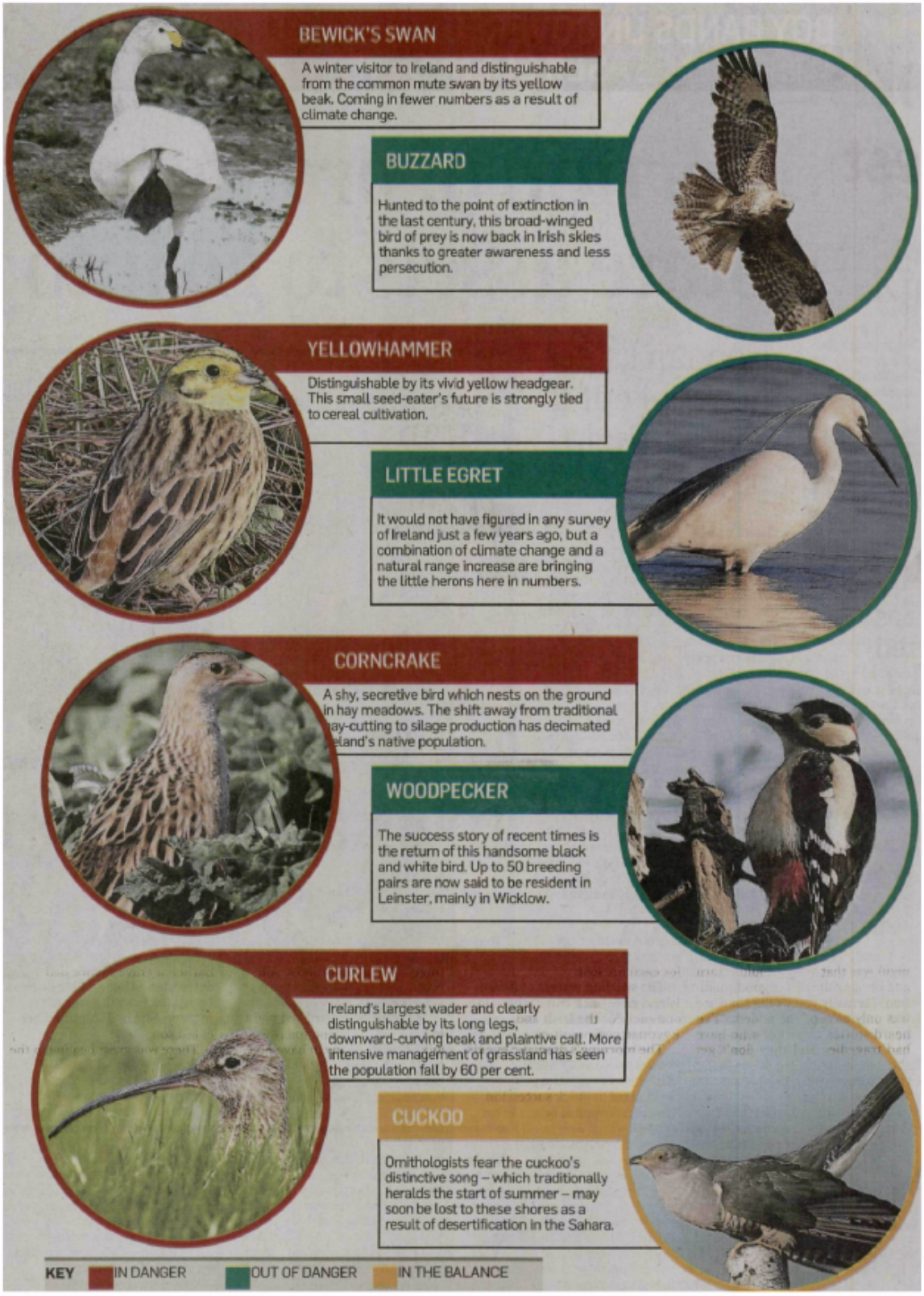

Publication: Irish Examiner
Date: Monday, December 19, 2011
Page: 11
Extract: 1 of 1
Circulation: 43.390
Author: Donal Hickey
Headline: We threaten wealth of biodiversity

We threaten wealth of biodiversity

Donal Hickey

BASICS of life, clear water and fresh air, we take for granted. But their biggest threat is human activity, according to new research. What people do is the key cause of damage to the natural world.

An Environmental Protection Agency (EPA) report is the first comprehensive assessment of the impact of our changing environment on Ireland's biodiversity (life in all its forms).

We have a wealth of biodiversity, from peatlands to woodlands, hedgerows, sand dunes and seas to all the animals and plants that depend on these habitats. But, biodiversity loss — the greatest environmental challenge facing humanity — is at rates comparable to major extinctions in history.

All of this could affect functions that provide the natural goods and services on which life, and livelihoods, depend. For example, our growing agriculture and food industry would be impossible without ecosystem services such as pollination by insects and soil conditioning by earthworms.

In our everyday lives, nature stores and filters drinking water and provides locations for stress-relieving walks in parks, woodlands and beaches.

Destruction includes bogland fires, roads through wetlands, river and lake pollution, large-scale removal of seaweed and the felling of woods for commercial purposes.

The new, EPA-funded report, Biochange, is based on a large scientific study led by Trinity College Dublin. As well as pinpointing the impact of human activities on biodiversity, it describes the economic and social costs of biodiversity loss and highlights how even small actions can bring big benefits.

The research identifies four main drivers of loss, all caused by human activity:

1. Habitat destruction and fragmentation.
2. The spread of non-native invasive species
3. Pollution
4. Over-exploitation of natural resources.

EPA director general, Laura Burke, says the research underlines the importance of protecting our ecosystems and highlights the need to keep such protection to the forefront of planning and government at national and local levels.

"The findings of this research will be of real benefit to policy makers in a range of areas such as agriculture, planning and environment management," she says.

The financial implications are significant. In 2008, the European Commission reported that the value of annual loss in ecosystem services resulting from biodiversity damage would be €14tn globally by 2050. At national level, a recent study valued ecosystem services in Ireland at €2.6bn per annum.

While the research pointed to the need for strong national and international action on biodiversity, it found that relatively small actions can bring big benefits in boosting species and their functions. "By ensuring that small fragments of habitat are protected in developed areas, and by conserving hedgerows in agricultural lands, we can take some immediate, positive steps towards halting biodiversity loss," says lead researcher, Dr Steve Waldren.

A key finding of the Biochange study is that easy-to-access information is fundamental in halting biodiversity loss and, as part of the project, NUI Galway created a database of Irish living organisms which documents 16,000 Irish species and can be seen at www.species.ie.

A selection of monitoring sites has been developed for study and research that will provide insight into the long-term impacts of pressures on biodiversity. The report highlights that much remains to be done to create an awareness of the importance of biodiversity; and that conservation makes economic sense.

Separately, top wildlife experts Dr Tina Aughney and Dr Roy Anderson have been recognised for their work on bats and creepy crawlies. They have received the National Biodiversity Data Centre (NBDC) 2011 Distinguished Recorder Award. Dr Anderson has documented 320 new animal and plant species in Ireland, while Dr Aughney has trained 1,000 people in bat surveying. NBDC chair Dr Mary Kelly-Quinn has described their contribution to understanding Ireland's wildlife as immense.

The centre has 1.8m records. These further our understanding of the 31,000 species that make up Ireland's biodiversity. They also identify those components at risk of extinction, and allow us to monitor the impact of pressures such as climate change.

Dr Aughney has worked in recording since the mid-1990s, contributing to the knowledge and conservation needs of Irish bat species. Dr Anderson, an authority on beetles and fungi, has published 200 papers and six books.