# **Curlew Conservation Programme**



Annual Report 2019





**An Roinn Cultúir, Oidhreachta agus Gaeltachta** Department of Culture, Heritage and the Gaeltacht

#### Citation: O'Donoghue, B.G. (2019). Curlew Conservation Programme Annual Report 2018. National Parks & Wildlife Service, Killarney.

Cover Photo: Curlew chicks hatching in County Kerry, Barry O'Donoghue

### Overview

- The Curlew Conservation Programme was established in 2017 to pioneer Curlew conservation efforts in Ireland. It is coordinated by the National Parks & Wildlife Service of the Department of Culture, Heritage & the Gaeltacht and involves a wide range of actors, proactively working to help Curlew. Central among these are the landowners where Ireland's last remaining Curlew breed.
- The Curlew Conservation Programme has a comprehensive framework that includes habitat maintenance, enhancement and creation; survey effort, nest protection; public and community engagement and much more.
- There are two main pillars within the Curlew Conservation Programme; one which delivers on the ground action and another which progresses research for a species that has received little attention in Ireland heretofore. Both pillars are closely intertwined and complementary.
- A locally-led approach is taken, whereby seven important locations for breeding Curlew in Ireland each have a locally-based team, working with local people and adapting techniques, efforts and priorities to what works best locally.
- The local teams, known as Curlew Action Teams (CATs), are comprised of three main roles:
  - o A Curlew Conservation Officer
  - A Nest Protection Officer
  - A Curlew Champion.
- An assistant role is assigned to CATs where required.
- The Curlew Conservation Programme is well received on the ground, where the local teams liaise closely with landowners and local communities, in the search and protection of breeding Curlew. The community and landowners in particular are a central part of the CCP, not apart from the CCP.
- The third year of the Curlew Conservation Programme, 2019, saw direct efforts in the following areas:
  - Stack's Mountains
  - Lough Corrib (North)
  - o Lough Ree
  - North Roscommon/Mayo
  - o Mid-Leitrim
  - o North Monaghan
  - o Donegal

- In these operational areas, 54 pairs were located in 2017, 45 pairs in 2018 and between 41 and 56 pairs in 2019. When the core areas that were covered in each of the three years are compared, those figures are 46 in 2017, 42 in 2018 and 41-56 in 2019.
- Of the 41 pairs for which breeding was confirmed in 2019, at least 25 reached hatching stage (61%). A minimum of 19 pairs produced fledglings (possibly others did so but were not recorded), so the breeding success rate was at least 43%. The total number of juveniles recorded to have fledged was at least 33, but again may have been more. This represents a breeding productivity of 0.805 fledglings/breeding pair, which is more almost twice the threshold of 0.425 fledglings/pair required for a stable population. The breeding productivity across the territories covered by the Curlew Conservation Programme has increased year on year. The national survey (2015-2017) estimated breeding productivity to be as low as 0.15; the first year of the CCP (2017) saw a breeding productivity in the action areas of 0.38 and in 2018, it was 0.43.
- Further habitat improvements were planned and undertaken in 2019, which should benefit Curlew into the future.
- The Curlew Conservation Programme continues to build skillsets, experience and momentum. The programme is widely supported, both nationally and internationally and most importantly in the local areas where Curlew are breeding.
- It is intended that the principles applied by the Curlew Conservation Programme will continue into the future, acting for Curlew conservation with local people, particularly landowners. The Curlew Conservation Programme is multifaceted, with various aspects of conservation applied, from nest protection to habitat enhancement to education, promotion and community liaison and much more.

## Background

The first national breeding Curlew survey, undertaken between 2015 and 2017, found drastic declines of the national breeding population of Curlews. Whereas 3300-5500 pairs are estimated to have bred in the Republic of Ireland in the late 1980s, there now remains no more than 150 pairs (O'Donoghue et al., 2019). This represents at least a 96% decline. Breeding productivity is so low that population viability analysis predicts that unless an average of 0.425 fledglings are produced per breeding pair, the Curlew will go extinct as a breeding species in Ireland within 5-10 years (A. Lauder, unpubl. data, 2017).

The National Parks & Wildlife Service of the Department of Culture, Heritage and the Gaeltacht introduced the Curlew Conservation Programme in 2017. This programme focusses on seven core Curlew breeding areas, with a view to delivering robust and effective measures that can be rolled out at a national level in future years. A research project is built into the programme, to inform how effective these measures are and what factors are most greatly influencing Curlew breeding success.

This report presents the main points of the Curlew Conservation Programme in 2019.

## Introduction

The Curlew Conservation Programme (CCP) has been designed to deliver action on the ground, at a local level, empowering local people to take ownership and involvement. The Agri-Ecology Unit of the National Parks & Wildlife Service manages the CCP. The Programme (including the research element) is run for approximately €0.25m per annum. In its third year, 2019, the Curlew Conservation Programme was active in seven areas, which collectively accounted for about half of pairs recorded in the national breeding survey in 2015 and 2016.

In parallel, in 2018 the <u>Irish Breeding Curlew EIP</u> was established, co-funded by the Department of Agriculture, Food & the Marine and the EU's European Agricultural Fund for Rural Development (EAFRD). This three season project focusses on two areas (Lough Corrib South and South Leitrim), with a budget of €1.1m (€0.36m per annum) and has an Organisational Group comprised of BirdWatch Ireland, the Irish Natura and Hill Farmers Association (INHFA), the Irish Grey Partridge Conservation Trust and Teagasc.

In addition, the national agri-environment programme, GLAS, is scheduled to pay approximately €8m over 5 years (€1.25m per annum) for farmers in any area where Curlew were recorded in the past decade, to voluntarily manage their lands in a Curlew-friendly manner by delivering a suitable sward structure, avoiding machinery operations during the breeding season and avoiding chemical inputs.

All of these efforts are undertaken in a wider context of ongoing threats and pressures, which have been identified, along with proposed solutions, by the Curlew Task Force, which in May 2019, produced a suite of recommendations for Curlew conservation.

The Curlew Conservation Programme was implemented on the ground in the form of field surveys, working with landowners to protect nests from disturbance and predation (seen as the greatest constraint to breeding success) and habitat maintenance, creation and enhancement. Community liaison, promotion of the Curlew and education were also significant aspects of the work undertaken. Each area had a locally based team (primarily consisting of local people) to carry out this action. In total, 22 people were contracted to form the local teams between late March and August. Early season contracts (February and early March) were given to Nest Protection Officers in particular areas, while certain habitat works were undertaken after August (in line with the Wildlife Acts). National Parks & Wildlife Service regional staff were centrally involved in a number of areas, particularly in Lough Corrib North and in the North Midlands Region.



Figure 1. The seven Curlew Conservation Action Areas.

Stacks

Leitrim

Donegal

Lough Ree

Monaghan

Lough Corrib

1.

2. 3.

4. 5.

6.

7.

## Curlew Action Teams and the Curlew Conservation Partnership

National Parks & Wildlife Service staff have for a number of years been undertaking surveys and proactive efforts for Curlew. The addition of dedicated Curlew Action Teams in some of the most important areas has enhanced these efforts and the Curlew Conservation Programme (CCP) has now built a tangible profile for conservation efforts with the local communities and nationally. These teams were given dedicated geographical areas and the support and autonomy to provide local solutions that were appropriate to the sites in question. The roles involved in the Curlew Action Teams are now described.

#### Curlew Advisory Officer

This was the lead role locally. The Curlew Advisory Officer (CAO) was the primary link between their local project team, the local community and the Curlew Conservation Programme manager. The CAO was tasked with nest finding, nest protection, liaising with and providing advice to landowners and coordinating efforts on curlew conservation, local administration and ecological recording.

#### Curlew Champion

This was a vital role in fostering and maintaining positive relations between the project and the community. One of the main ingredients in realising success in any conservation effort is to gain real 'buy in' from the landowners and local community. The Curlew Champion was tasked with encouraging close working relationships between project personnel and landowners, organising meetings, building a positive profile for Curlew and the Curlew Conservation Programme among landowners and local community, highlighting issues and proposing solutions. It should be noted also, that the majority of people contracted on the Curlew Action Teams were from the local area themselves and this further helped with community and landowner engagement.

#### Curlew Nest Protection Officer

One of the primary constraints for breeding Curlew is the difficulties they are experiencing in hatching eggs and rearing young (Franks et al., 2017). Predation is believed to be a main cause of breeding failure (Ainsworth et al., 2016). In order to address the issue of predation, a two-pronged approach was designed – nest protection fences and predator control. The role of the Nest Protection Officer was to humanely cull Fox, Mink, Hooded Crow and Magpie in the vicinity of Curlew breeding territories (primarily within 1km of nest sites), in accordance with the law. The Nest Protection Officer was also to assist in efforts to find breeding Curlew, and in assembling and maintaining nest protection fences. The presence of Nest Protection Officers proved to be largely welcomed by locals, particularly livestock farmers.

#### Curlew Action Team Assistant

The breadth of work involved in Curlew conservation efforts is significant and additional resources are required in some of the larger and busier areas. The assistant role was to be utilised as required, whether in terms of supplementing survey effort or community engagement or any other aspect of the local team effort.



Figure 2. Curlew Action Team – sum of the parts

#### Curlew Conservation Partnership

In order to engage proactively with those who own and manage lands where Curlew breed, the Curlew Conservation Partnership (the public engagement aspect of the Curlew Conservation Programme) has been designed to allow payments for landowners (primarily farmers, but also others as appropriate), for their time and efforts with the Curlew Conservation Programme. Payments are operated under the auspices of the National Parks & Wildlife Service Farm Plan Scheme (NPWS, 2017) and any double-funding/contradiction for works planned under the Green Low-carbon Agri-environment Scheme (GLAS) are avoided. Where there are other agrienvironmental programmes (e.g. the Hen Harrier Project in the Hen Harrier SPAs), communication between projects at management level and on the ground ensures compatibility and synergies. Plans are designed and agreed with landowners/land managers to deliver a better environment for breeding Curlew. Payments can be made for various aspects of maintaining, creating and improving habitats and for a participant's time investment in liaising with the local CAT. The partnership element is very important in building strong and positive relationships between the local landowners/land managers and the local CAT.

In 2018, a community fund under the Curlew Conservation Partnership was awarded to six separate local projects with objectives to help Curlew. This allowed conservation efforts on a wider geographical basis, driven by the local people themselves, with linkages to the Curlew Conservation Programme. These grants allowed local efforts to be undertaken in advance of or throughout the 2019 breeding season.

## **Conservation Action in 2019**

#### Areas

As already stated, the third year of the Curlew Conservation Programme saw direct efforts in the following Curlew areas:

- o Stack's Mountains
- o Lough Ree
- North Roscommon/East Mayo
- o Mid-Leitrim
- o North Monaghan
- o Donegal
- Lough Corrib (North)

#### <u>Surveys</u>

At the outset of the breeding season, the same geographical areas were targeted as in 2018 (apart from Lough Corrib (South), where the Irish Breeding Curlew EIP was active. Should Curlew have been reported to the Curlew Action Team or NPWS during the breeding season outside of but relatively close to these areas, CATs were encouraged to follow up on these reports and to monitor the breeding efforts and apply conservation action if possible. Therefore as the season progressed, the footprint of efforts in 2019 did not precisely match that of 2018.

Surveys were largely focussed within 3km of Curlew territories known since 2015 (the first year of the national survey), but were not limited to these areas and a wide net was cast by the Curlew Action Teams where they sought and received reports of Curlews from elsewhere in their regions. Word of mouth and local media and outreach materials were used to seek reports of Curlew during the breeding season. Curlew Action Teams and/or NPWS staff in each area adopted survey techniques to suit their landscape, terrain and individual site requirements. A combination of walkover surveys, vantage point surveys, use of tape lures and discussions with local landowners were used. For the lake areas (Lough Corrib and Lough Ree), added logistics included the use of boats to access islands and this brought its own intricacies (in terms of avoiding disturbance of birds as boats approached the islands). Even though each CAT had the flexibility to adopt the survey techniques that best suited the local circumstances, data collection was standardised and collated centrally.

Some of the core objectives of the survey work were to determine as closely as possible, where the Curlew were nesting, where they were feeding and the outcomes of the breeding efforts. Determining nest and feeding locations was imperative to directing nest protection efforts and informing habitat maintenance, creation and enhancement works. These data and data pertaining to breeding results were also central to the research project that follows the action on the ground, in order to determine the efficacy of measures carried out, to learn more about Curlew ecology in Ireland and to monitor location population trends over the coming years.



Figure 3. Kathryn Sheridan, Mark Craven and Barry O'Donoghue on the banks of the River Shannon surveying for Curlew and scoring breeding habitat quality. (Photo: Owen Murphy).

#### Nest Protection

Predation of Curlew nests (eggs and chicks) has been identified as excessive and population viability analysis shows that in the absence of action, Curlew will become virtually extinct as a native Irish breeding bird after 2025 (Alan Lauder, unpubl. data). Nest Protection efforts primarily focussed on the targeted removal of North American Mink (*Neovison vison*), Red Fox (*Vulpes vulpes*), Magpie (*Pica pica*) and Hooded Crow (*Corvus cornix*). The reduction of generalist predators has also benefitted various other breeding birds. Nest protection fences were deployed by CAT members at six sites in 2019, with four of these reaching hatching stage. At another site outside of the CAT areas, where efforts were funded via the Curlew Conservation Partnership grant, a local team of volunteers (Tom McCormack, Denis Judge and Anthony Mooney) deployed another nest protection fence with advice from the CCP and this also helped the pair hatch their eggs (the first attempt onsite was predated just a day before it was planned to erect a nest protection fence). This year saw an evolution in approach for nest protect the Curlew chicks that become mobile soon after hatching. In 2018, a permanent predator exclusion fence was erected at a site in Lough Ree and this was operational for the 2019 breeding season.



Figure 4. Curlew nests, clockwise from bottom left. Clutch of four eggs on Lough Ree (Owen Murphy). Egg beginning to hatch on Lough Ree (Owen Murphy). Chick hatched and other eggs hatching in Donegal (Martin Moloney). Perimeter fence in Monaghan to contain chicks and exclude ground predators (Donal Beagan).

#### Engagement with Landowners, Communities and the Wider Public

The Curlew is a well-known and much loved bird in Ireland, with links to landscape, literary, cultural and social heritage dating back centuries. Naturally, given the serious decline of the population, conservation efforts for Curlew in Ireland have been of interest to the public and the media whether local, national or online have featured the work of the Curlew Conservation Programme. There have been positive features in various national and local newspapers and radio stations and television. In addition, there was prolific social media coverage in 2019. Outreach and educational material was produced by the Curlew Conservation Programme, including information leaflets, posters and stickers. These were all very popular in the localities where the CATs were active, but also nationally. The positive profile of the Curlew Conservation Programme is important in maintaining the public support that the species has enjoyed. This is backed-up on the ground by good public relations through the local Curlew Action Teams, which themselves are primarily composed of local people.

## Wing and a prayer: 97pc fall in curlew numbers



Figure 5. One of a number of features in national and local media on the need to help Curlew (Irish Independent).

efforts.

One-to-one engagement with local people, especially landowners, was a central tenet of the Curlew Conservation Programme throughout the course of the breeding season and indeed in advance of and since the breeding season. Some nests in silage fields were protected from silage harvesting and nests in turbary (turf cutting) areas were protected from mechanical operations, all in close cooperation with the farmers/turf cutters. Habitat enhancement works have been undertaken with a number of landowners. In a number of areas, local gun clubs have been particularly helpful in lessening the risk of Curlew egg and chick predation. Reports from local landowners and people living in the Curlew areas have been central to the survey efforts of the Curlew Action Teams on the ground. There was very welcome engagement with some agri-environmental planners in particular areas, which brought added value to their efforts and those of the Curlew Conservation Programme.



Figure 6. Farmer Con looks over the last remaining pair of Curlew on the border between Kerry and Cork. (Photo: David Rees).

Local and national festivals and events, school talks, marts and much more were attended by members of the CATs in 2019. Various events around the country were organised by the Curlew Conservation Programme in the lead up to World Curlew Day on 21 April, which was launched by Minister Josepha Madigan. To show a united support for Curlew as one of Ireland's most recognisable and appreciated birds, various County Councils flew the Curlew Flag at their County Buildings and this featured widely across social media.



Figure 7. World Curlew Day. The Curlew Conservation Programme organised various events across the country. This year, the Curlew Flag was flown at the County Buildings of counties where the Curlew Conservation Programme was active. Some examples include: Oifigí an Chontae, Muineacháin (thuas); Áras an Chontae, Maigh Eo (thíos).

The Curlew Conservation Programme is pioneering and innovative in many ways, from the fact that it is the first dedicated programme for Curlew conservation in Ireland, to the model of local teams comprised of various complementary skillsets. However, three particular ventures neatly summarise the innovative and 'outside the box' thinking that comes to the fore when dealing with an issue that requires innovative 'outside the box' solutions. A Donegal artist, Brendan Farren was approached by Curlew Advisory Officer Fidelma Flannelly, to design and build some large Curlew structures, which will be strategically placed at a number of towns and villages in areas where Curlew still breed today. A 'Curlew Family' was brought together by team member Annie Birtwhistle and her family and they walked the popular Roscommon Easter Parade, which drew great attention, indeed right across the globe, when the 'costumes' were featured widely across social media. A short film was created by final year Creative Media students at the Institute of Technology Tralee, featuring the loss of the Curlew from our world. A particularly poignant and beautiful piece, produced in collaboration with the Department of Culture, Heritage & the Gaeltacht; it has featured at various local and international festivals and will in time, be available online.



Figure 8. Artist Brendan Farren with one of the Willow-woven Curlew structures that will be donated to particular towns where the Curlew Conservation Programme is active (Photo: Big Green Art, Donegal).



Figure 9. Promotional poster for 'The Lost Bond'.



Figure 10. Education and participation in local events is an integral part of the Curlew Conservation Programme. Above: Tim O'Donoghue at a school visit, Co. Kerry (Photo: David Rees). Below: The "Curlew Family" that participated in the Roscommon Easter Parade (Photo: Fidelma Flannelly).

#### Habitat Enhancement

Habitat enhancement works were planned at a range of sites in 2019, including by the Curlew Action Teams of the CCP and some of the Curlew Conservation Partnership grant recipients elsewhere. These include the following efforts:

- Fencing to deter predators
- Rush cutting
- Scrub clearance
- Drain re-profiling
- Tree removal (strategically undertaken near nesting site where Hooded Crows were using conifers as perching and outlook posts)



Figure 11. An adult Curlew (well camouflaged in centre) stands close to some scrub that has begun to dominate its breeding site (an island on Lough Ree). If left unchecked, the scrub would eventually render the breeding site useless to Curlew. (Photo: Owen Murphy).

## Populations (numbers and breeding outcomes)

Populations per area are generally measured over the same geographical footprint as in 2018. However, sites in Lough Corrib (South), where there were six pairs in 2017 and three to four pairs in 2018 were monitored solely by the Irish Breeding Curlew EIP in 2019, while three additional sites close to Lough Ree were incorporated into the Lough Ree CAT survey efforts in 2019. In the Mayo-Roscommon CAT area, there was a shift in emphasis from Roscommon sites that were previously reported in the national survey to Mayo sites that had been unrecorded in the national survey, but discovered by the local CAT.

Curlew can be elusive birds to survey in their natural habitat and terrain, particularly in terms of determining precise nest locations and breeding productivity (the number of young fledged). In a number of cases, it could not be determined with certainty if a single bird had a mate, or if two birds together settled to breed. Therefore, a minimum and maximum number of pairs is presented in Table 2, which summarises the survey results for each of the CAT areas. Where a pair was noted to have fledged young (e.g. young seen/heard or adults exhibiting protective/chick communicative behaviour more than five weeks after hatching) and where the number of fledglings was not certain, a value of one fledgling was noted (though there may have been more fledged, it could only be definitively stated that at least one fledged). Furthermore in the interests of consistency and reliability, breeding productivity was taken as the minimum number of fledglings that were produced by pairs that were confirmed breeding.

Region	Min Pairs	Max Pairs*	Min. Pairs Reached Hatching	Min. Pairs Reached Fledging	Min. Number of Fledglings	Min. Breeding Productivity (of confirmed breeding pairs)
Stacks	2	6	1	0	0	0
Lough Ree	14	17	7	6	8	0.57
Roscommon/Mayo	5	6	3	3	8	1.6
Mid-Leitrim	8	11	6	5	9	0.88
Monaghan	3	6	1	0	0	0
Donegal	4	4	3	1	2	0. 50
Lough Corrib (North)	5	6	4	4	6	1.20
TOTAL	41	56	25	19	33	0.805**

Table 2. Survey results for breeding Curlew in the CAT areas 2019

\* some pairs were noted in the course of the breeding season, but it was not confirmed whether they bred.

\*\*the minimum number of chicks that fledged from confirmed breeding pairs

Population figures are not readily comparable across years, since the inaugural year of the CCP in 2017. This is principally because the Irish Breeding Curlew EIP was established in 2018 in South Leitrim and Lough Corrib (South). Consequently, there were no surveys by the CCP in South Leitrim in 2018, while Lough Corrib (South) was incorporated in CCP statistics in 2018 but not 2019. Also, the original CAT area of North Roscommon-Leitrim has evolved into two areas, Roscommon/Mayo and Mid-Leitrim. Table 3 compares the 'like for like' geographical areas covered by the CCP since 2017.

Region	2017	2018	2019
Stacks	6	6	2-6
Lough Ree	16	16	14-17
Roscommon/Mayo	5	5	5-6
Mid-Leitrim	4	5	8-11
Monaghan	4	5	3-6
Donegal	2	2	4
Lough Corrib (North)	9	3	5-6
TOTAL	46	42	41-56

Table 3. Number of Curlew breeding pairs in the 2019 geographical footprint of the CCP.

Overall, the number of confirmed breeding pairs in the areas covered by the CATs since 2017 has declined from 46 in 2017 to 41 in 2019. Furthermore, it should be noted that even within these geographical areas, there are individual breeding sites that have been lost or newly discovered since the CCP began. Given how site faithful Curlew are to their breeding grounds, this a serious cause of concern and would be in-keeping with projections for population extinction in the absence of conservation action.

We may however be seeing the first green shoots of the conservation action being applied in these areas, as the breeding productivity has increased year-on-year since the CCP began. Of the 41 pairs

for which breeding was confirmed in 2019, at least 25 reached hatching stage (61%). A minimum of 19 pairs produced fledglings (possibly others did so but were not recorded), so the breeding success rate was at least 43%. The total number of juveniles recorded to have fledged was at least 33, but again may have been more. This represents a breeding productivity of 0.805 fledglings/breeding pair, which is more almost twice the threshold of 0.425 fledglings/pair required for a stable population according to Irish specific data (A. Lauder, unpubl. data) and greater than the threshold of 0.48-0.62 previously calculated by Grant et al. (1999). The national survey (2015-2016) estimated breeding productivity at the time may have been as low as 0.15, while the first year of the CCP (2017) saw a breeding productivity of 0.38 and in 2018, it was 0.43.

It is clear that the nest protection fences have proven beneficial in progressing breeding attempts beyond the egg stage to chick stage. Of a total of 11 breeding attempts protected by fencing to date, eight have hatched chicks, representing a 72% hatching success rate. This will need to be up-scaled in future years to derive greatest benefit.

Within the detail of the breeding productivity data, it can be seen that in 2019, five of the seven CCP areas fledged enough young to maintain a stable population and indeed grow the population (cf. A. Lauder, unpubl. data, Figure 12). However, this needs to be looked at over a longer period and more detailed parameters explored. This will be a central interest of the research element of the CCP being undertaken by UCD, utilising the data gathered by the Curlew Action Teams. Taking a quick glance over the 2017-2019 period, it is apparent that the lake areas (Lough Corrib North and Lough Ree) are performing well in terms of breeding productivity, most likely due to the fact that losses to predation are more easily controlled on islands surrounded by a natural barrier to most ground mammals (expanses of water). Both Mid-Leitrim and Mayo-Roscommon had particularly fruitful breeding seasons in 2019 and reasons for this will need to be explored in greater detail. The Stack's Mountains (4 fledglings), Monaghan (1 fledgling) and Donegal (2 fledglings) have clearly not produced enough young chicks (an amalgamated productivity of 0.21 chicks fledged per attempt) since 2017 to maintain a stable population going forward. Donegal continues to be a great concern, given there has been for some years now, a conservation presence by both by both BirdWatch Ireland under INTERREG projects (HELP and CABB), Department of Agriculture, Food & the Marine (GLAS) and NPWS (CCP).

There may be a number of factors influencing Curlew breeding success and productivity beyond the obvious threats of modern land-use, predation and anthropogenic pressures. Last year saw a very poor spring and difficult drought conditions in summer. This year, fires in the Stack's Mountains were particularly devastating, with large areas turned to ash, with large scale loss of habitat and various wildlife, the effects of which will last for years to come. Two small chicks were found dead in June and another young Curlew was found dead in August, with Post Mortems pointing to starvation as a likely cause of death. Further research is earmarked regarding food availability for adults and chicks.

Given the sensitive nature of the species, the locations of the pairs are held by the National Parks & Wildlife Service are not disclosed in this report.



NPWS/BWI/BTO/RSPB (Lauder, unpubl. data).

## Research

As part of the Curlew Conservation Programme, integrated research is underway at University College Dublin, financed and supported by the National Parks & Wildlife Service of the Department of Culture, Heritage & the Gaeltacht. This is incorporating data from the breeding seasons as collected by the Curlew Action Teams, with the primary objectives of furthering knowledge of Curlew ecological requirements and the examining in greater detail the issues affecting their conservation. There are various aspects to this research including:

- Mapping of nest and territory locations recorded by the Curlew Action Teams
- An appraisal of and details of nest site selection according to habitat 300m around the nest and on a hinterland basis (3km radius from nest site)
- An appraisal of and details of breeding philopatry
- An appraisal of and details of breeding phenology (provided annually, with an overall synthesis at end of project)
- As part of the research pillar of the Curlew Conservation Programme, a MSc thesis was undertaken by postgraduate student, Sarah Keenan entitled "Relating patterns of land-use change to the decline of breeding Eurasian Curlew (*Numenius arquata*) in Ireland". This work went towards a comparison of land use in territories that have been lost since 2007 and those that remain. Sites that retained Curlew had more grassland and less afforestation than sites that lost Curlew, but statistical significance was not found, mainly due to limitations of

the dataset (namely CORINE). It is hoped that the use of more robust datasets will shed greater light on the impact of land use on Curlew in known breeding territories here.

- An appraisal of and details of predators frequenting Curlew nest sites, times and dates in relation to stage of breeding and frequency of activity
- An appraisal of and details of whether particular habitats/features correlate to predator type, abundance and activity
- A determination of hatching success
- A determination of fledging success
- An appraisal of and details of whether particular habitats/features/conservation interventions correlate to breeding success/productivity



Figure 13. Dr. Kendrew Colhoun of UCD discusses the research element of the CCP with CAT members. (Photo: John Carey).

There is also an important socio-economic aspect to the research element of the Curlew Conservation Programme, whereby the birds or the science are not viewed in isolation, but as a product of the presence and management of the landowners of the Curlew territories. Social studies have been undertaken to look at issues such as farm succession, attitudes towards habitat and landscape changes, understanding of Curlew, future prospects for land use in Curlew breeding territories and what landowners feel they need to deliver a favourable environment for Curlew. The findings of this research should be available in late 2019, which is hot on the heels of the Curlew Task Force recommendations and timely in advance of the next CAP Strategic Plan.

## Conclusion

In the second year of the CCP (2018), it was apparent that there may have been some green shoots in terms of the breeding productivity of Curlew in the conservation areas improving. This is ultimately what is required if the long-term decline of Curlew in Ireland is to be arrested and turned around. This became even more apparent in the third year of the CCP (2019), with a breeding productivity that if sustained, would see the breeding population not alone stabilise, but expand. In time, the young Curlew that have fledged from these areas may be recruited into the breeding population themselves and hopefully the decline of breeding Curlew in these areas will be halted and reversed.

The key points here however, are that this would need to be sustained on an on-going basis and that ultimately, the environment and landscape into which they return will need to be greatly improved if the population is to be placed on a truly sustainable footing. This will require wider policy changes.

The pilot phase of the Curlew Conservation Programme, just three years in, has shown that prospects can be improved by following the model of locally based teams, engaged positively and proactively with relevant stakeholders, most especially landowners, to find and safeguard the breeding attempts and improve the immediate habitat and environment for breeding attempts.

This will need to be scaled-up to a national level and replicated at other Curlew breeding sites nationally. The mechanisms for doing (funding) this have been identified and will be explored with the relevant stakeholders.

It should at all times be remembered, that while the Curlew Conservation Programme and the Irish Breeding Curlew EIP and GLAS are positive forces for Curlews in Ireland, there are still many more and stronger negative forces that have brought the population to the verge of extinction. The wider policy context that influences conservation has been examined by the Curlew Task Force, which involved a wide range of relevant stakeholders, coordinated by an independent Chairman. The coming years will be pivotal for Curlew and for the efforts of all concerned.

It has become apparent also, that for some areas, deeper conservation efforts will be required. In the Stack's, Monaghan and Donegal, breeding productivity has overall not been sufficient to maintain a stable breeding population (albeit still performing better than certain other parts of Ireland and Britain). This has likely been for various site-specific reasons, which may not be overcome or changed in a matter of years. In that matter of years, these populations could be lost entirely unless further novel measures (including head starting) are taken in tandem with wider land use management/design.

The efforts of the CCP, particularly the local teams, in building and maintaining a positive profile for the Curlew cannot be over-stated. Oftentimes, conflict can arise between the desires of those involved in conservation and the desires of landowners to manage their land as they see best. The understanding and communication skills (which involve listening as well as talking) of those involved in the CCP has been exemplary and the experience to date has been largely positive with countless landowners and local people helping with reporting sightings, facilitating access, providing advice and undertaking efforts to help the Curlew. With Brexit and Mercosur on the not too distant horizon, many farmers are also seeing the value to conserving the Curlew (and other habitats/species), by way of deriving an additional income via agri-environmental schemes, which may be the difference between their farming enterprise continuing or not.

## Acknowledgements

Minister Josepha Madigan for her continued support of and interest in the Curlew Conservation Programme. Katherine Licken, Niall Ó Donnchú and Ciarán O'Keeffe for their leadership and vision.

All landowners who engaged proactively with and facilitated the efforts of the Curlew Action Teams, many of whom went above and beyond what was expected or required. Your assistance and encouragement was greatly appreciated by all concerned.

All the members and organisations involved in the Curlew Task Force.

All who worked on or provided input and advice to the Curlew Conservation Programme, including Chris Barron, Donal Beagan, Annie Birtwhistle, Dr. Andy Bleasdale, Shane Brien, Conor Campbell, Vincent Campbell, Dr. John Carey, Grace Claydon, Cameron Clotworthy, Dr. Kendrew Colhoun, Eoin Connolly, Pádraic Corcoran, William Cormacan, Mark Craven, Michael Cunniffe, Patrick Farrell, David Ferguson, Edward Flannelly, Fidelma Flannelly, Vincent Flannelly, Kieran Flynn, Laura Gallagher, Patrick Gleeson, Lorna Grehan, Michael Hackett, Cathryn Hannon, John Higgins, Dr. Seán Kelly, Noel Kiernan, Evelyn Kirwan, Jennifer Lynch, John Matthews, Pat McKenna, Tom McKenna, Nicholas Mitchell, Sue Moles, Daniel Moloney, Martin Moloney, NPWS GIS Unit, Pat McKenna, Dr. Barry McMahon, Owen Murphy, Tom O'Brien, Tim O'Donoghue, James Orr, David Rees, Tim Roderick, David Ryan, Pat Ryan, Joe Shannon, Jim Sheridan, Kathryn Sheridan, Andrew Speer, Catherine Vernor, Úna Williams and Matthew Wilson-Wright.

Dr. John Carey was particularly instrumental in the collation of data from CAT members and various other day-to-day interactions on various elements of the CCP and this was massively welcome and appreciated. Dr. Seán Kelly, who now has responsibility for Curlew conservation with NPWS has been involved with the CCP in various roles since 2017 and has always been helpful and supportive throughout, which again was greatly appreciated.

Those who were recipients of the Curlew Conservation Partnership grants and provided useful reports and data from their projects.

Members of the public, colleagues in the NPWS and the Hen Harrier Project EIP who submitted records of Curlew during the breeding season, inside and outside of the core CCP areas. Furthermore, the Hen Harrier Project has been a good ally of the Curlew Conservation Programme in terms of synergies between surveyors, nest protection officers, information exchange and habitat management.

Colleagues in various sections of the Department of Culture, Heritage & the Gaeltacht for their good will and support. Most notably Róisín O'Hara, Máire T. Ní Chonghaile, Sarah Morris, Gareth John and Frank Henry (Frank Communications) for their assistance in social media and IT.

Colleagues in the Department of Agriculture, Food & the Marine and with the Irish Breeding Curlew EIP for concerted efforts to help Curlew; ní neart go cur le chéile.

Colleagues in County Councils who facilitated the raising of the Curlew Flag at County Buildings: Deirdre Cunningham, Shirley Clerkin, Rory Sheehan, Sarah Malone, Marie Mannion, Steven Lally, Gráinne Smyth and many more.

Joe Carr followed the progress of the Curlew Action Teams as part of a photography project he is working on and was warmly welcomed by all concerned.

The students and staff of IT Tralee's Creative Media Department who put their hearts and minds into a beautiful animation featuring the Curlew, which stole the hearts and minds of the public. In particular Rosie Dempsey, Marty Boylan, Corina Van Deventer, Deborah Christie Tan, Brian Shray and Elton Assemota.

Further art was created by Brendan Farren, in conjunction with Fidelma Flannelly, in the form of the iconic Curlew structures, which are to be placed in three towns where the Curlews remain.

The various media outlets, local festivals, events and community groups that featured the Curlew Conservation Programme in 2019. While operating at a national level, this is very much about the local story and the local efforts to protect a bird that is very much part of our local areas.



Figure 14. Curlew Action Team pre-season meeting 2019. (Photo: John Carey).

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