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Whooper Swan Monitoring 2020/21: Ten-T (Sect 3)

Report to Barry Transportation/RPS



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Any advice, opinions or recommendations expressed in this report are based upon due diligence including the authors' interpretation of field conditions experienced at the time of survey. The authors do not accept any responsibility for material changes to field conditions which may have occurred subsequent to the survey date.

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Executive Summary

This project is concerned with monitoring the distribution and movements of Icelandic Whooper Swans, a species of conservation interest known to utilise the areas in Section 3 (N14) of the Ten-T Priority Route Improvement Project near Lifford, Co. Donegal.

A programme of monitoring was undertaken between November and April in the winter of 2020/21.

Surveys were conducted at least once per month following road transects routes and utilising suitable vantage point locations, recording the location, flock size, flock composition and movements of Whooper Swans in an area of ~21km² north and north-west of Lifford.

This area is traditionally used by Icelandic Whooper Swans, with transient use in autumn and spring by birds on passage when higher numbers may occur for short periods. The majority of wintering birds occur on either side of the River Foyle at Swilly Burn, roosting on the river and utilising the improved grasslands to the east (Grange, Co. Derry) or west in Co. Donegal.

During 2020/21 monitoring a similar pattern to the historic one was evident, in respect to peak numbers (~300 individuals), distribution and phenology of site use. The largest and most sedentary flocks occurred at the confluence of the Swilly Burn and River Foyle ~6km NNE of Lifford; smaller flocks occurred along Swilly Burn to the west towards the intersection with the N14 including one flock (~40 birds) consistently through February and March along the N14. The utilisation of potato crops here as elsewhere is ephemeral – when this habitat is available anywhere within traditional sites they will exploit them temporarily. Due to the rotational nature of this crop type and the farming landscape in which it occurs it is concluded that the planned road development works will have no significant impact on the Whooper Swan population utilising the general Foyle/Swilly Burn area.

1. Background

1.1 Project Brief

KRC Ecological Ltd were invited to undertake a survey of the N14 and environs, building on work undertaken in previous winters by RPS. This comprised a full 'winter' season of bi-monthly counts in the area documenting the numbers, distribution and movement patterns of Whooper Swans within the area which would form the basis of an evaluation of the relative importance of areas within the footprint of the scheme for this species of conservation interest.

1.2 Objectives

The primary objectives of the survey work commissioned in 2021 were as follows:

- Document the size, location, composition of Whooper Swan flocks in the study area in the winter of 2020/21
- Document the presence of associated species (e.g. waders/geese)
- Source appropriate and relevant information from others
- Compile a short report in the broader context of Whooper Swan status in the area

2. Study Area

The study area comprises some 20km² north and northwest of Lifford, Co. Donegal (54.83, -7.48; Figure 1) dominated by agricultural land interspersed with sparse small areas of marsh/fen and woodland habitats. Low density housing occurs across the area, mostly developed in a linear fashion along the many small roads and with the many small farms. The topography is dominated by two floodplains - the larger River Foyle running N-S along the east of the area, and the much smaller Swilly Burn which flows eastwards into the River Foyle. Elsewhere the land bounded in Figure 1 rises to < 80m elevation is farmland. Agricultural land is predominant (> 95%) and within that the predominant habitat type is improved grassland (for grazing and/or silage production). There are small amounts (< ~5% of farmed area) of arable – wheat/barley or potatoes.



Figure 1. Location of study area NW of Lifford, Co. Donegal.

3. Methods

A number of road transects combined with vantage counts were used to identify occupied areas by Whooper Swans and to record flight-lines which, for example, could reveal the location of additional flocks or be flight-lines associated with commuting to/from roosts. During each survey all areas within the 20km² were visited at least twice, the only exception being the eastern side of River Foyle (Grange) where visits were not made on every occasion.

Surveys were conducted for periods of around six hours at least once per month from November through to April. The positions of each flock of Whooper Swans, geese or waders encountered was recorded on a field map to land management units (field parcels; ITM co-ordinates). In addition to the location, the habitat type, and flock size and composition (distinguishing 1st winter/adult swans and noting family units sizes) were noted.

4. Results

Whooper Swan surveys were conducted on twenty different dates by three different groups (KC, Barry Engineering LLO Team, Nick Duff) between December 03, 2020 and 07 April, 2021 as follows: December (6), January (2), February (6), March (5) and April (1).

Numbers peaked in February (n=299 birds) when numbers were highest for a period of ~ 4 weeks in the area of Swilly Burn at River Foyle (R265; areas 5 & 6; Figure 2). Elsewhere, and for the majority of the winter (Dec – March), average peak counts across the entire site were between 52 and 62 birds. Figure 3 summarises the peak monthly counts by area.

There was a clear sequence of usage of the site through the season, with a small flock (peaking at 37 birds) utilising two adjacent potato fields along the N14 corridor (area 1; ITM: 629171,903784) for a period of ca. six weeks (mid-December until early February), reducing in number through time and a proportionate increase in the usage of grasslands ca. 5km to the SE, east and west of the N14/Swilly Burn crossing at Feddyglass. This flock (mostly using a small group of fields west of the N14 at the crossing (ITM: 630250,902440; area 2, Figure 2)) were present almost continuously through much of February and March. Finally overall site numbers grew, with the majority of birds occurring at the Swilly Burn confluence with the River Foyle.

In the area within the N14 corridor, therefore, there were two main areas of usage – (1) the pair of potato fields at Drumbeg (area 1; Figure 2, Figure 6) used by 10-40 birds for a period of ca. 6 weeks and (2) the N14 / Swilly Burn crossing at Feddyglass where a similar-sized flock fed on a limited range of grass fields from January through to March (Figure 7). There were no ringed or colour-marked birds in these flocks to link individual birds' usage, but on several occasions the linkage between sites 1 and 2 or 3 (Figure 2) was evident through commuting flocks being observed moving between them. The location of all observed flocks is shown in Figure 6 and full details of observations are in Appendix 1.

There were no other notable species (geese or waders) observed utilising fields in the vicinity of the N14 at any point. There were flocks of Greylag Geese *Anser anser* (max 145), Lapwing *Vanellus vanellus* (max 150) and Golden Plover (max 60) all at Swilly Burn (R265; area 5).

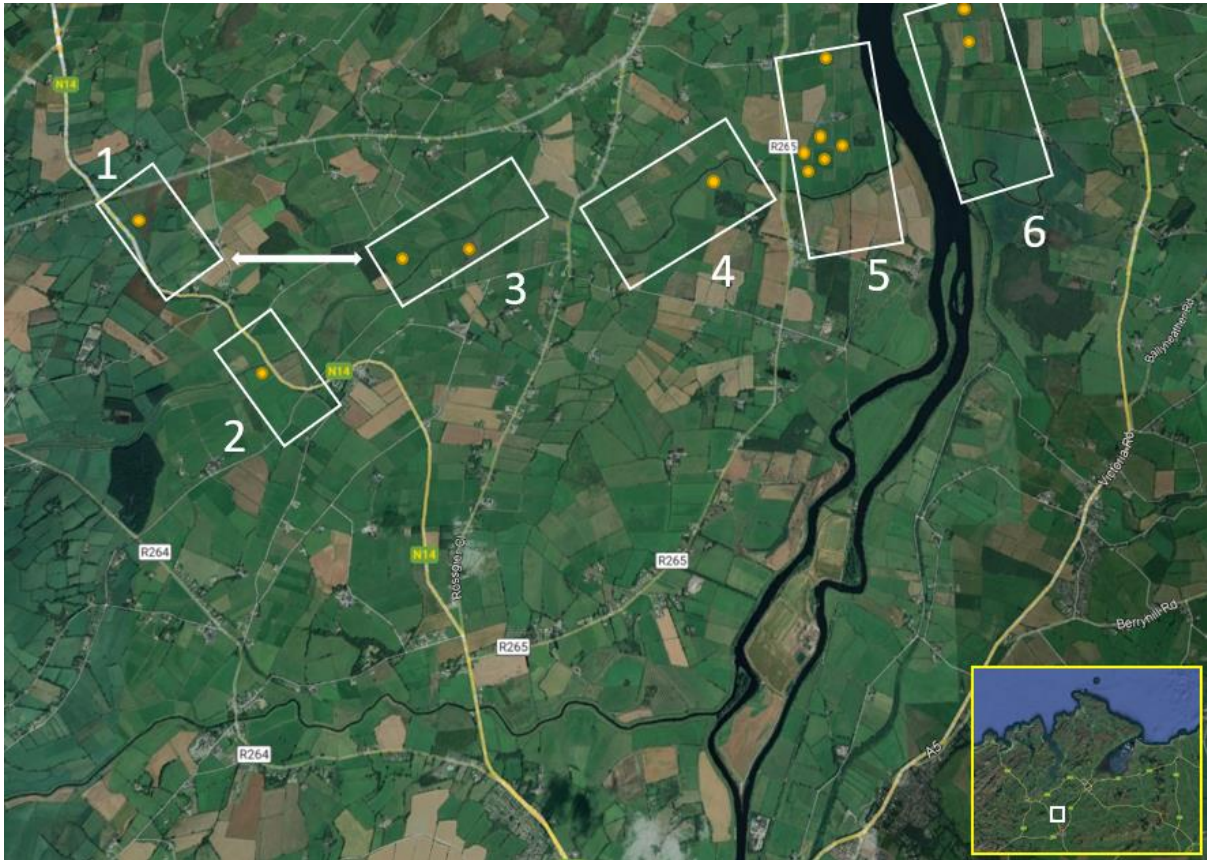


Figure 2. Location of main flocks (dots) and subsites within the Swilly Burn area. The arrow shows the main movement corridor of birds in the vicinity when moving between foraging on potatoes (area 1) and grassland (areas 2/3).

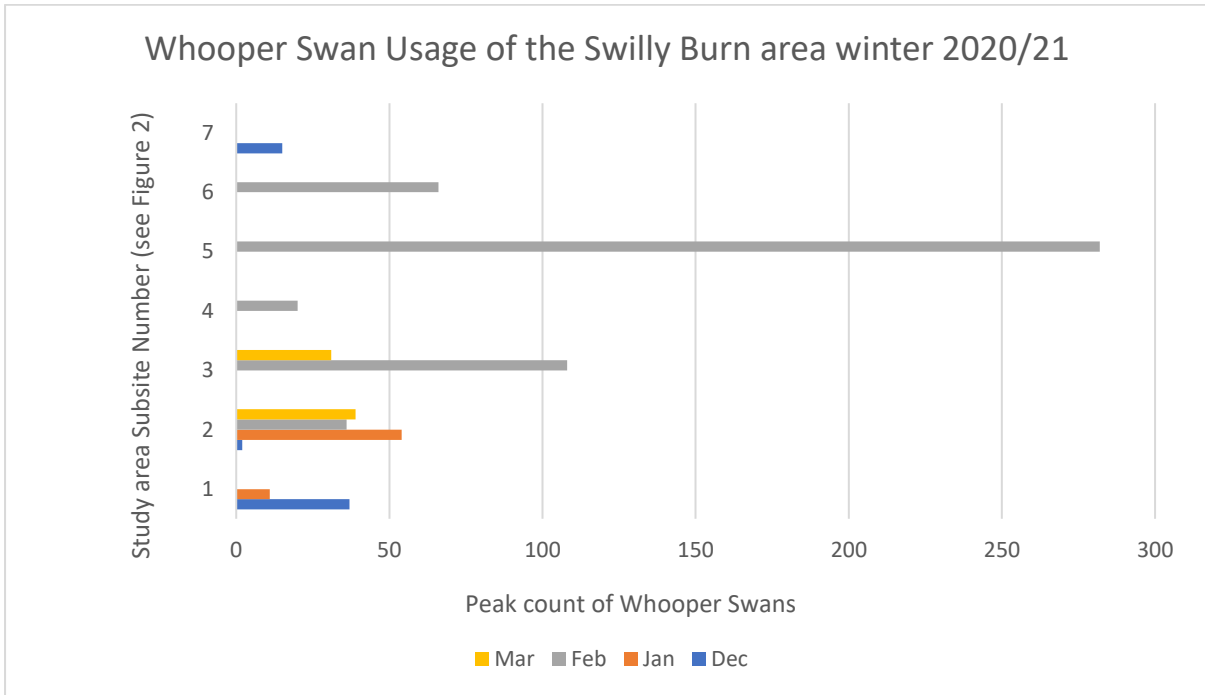


Figure 3. Usage of the study area by Whooper Swans in winter 2020/21. The study area subsections (labelled 1-7) are shown in Figure 2.



Figure 4. Area in potato fields at Drumbeg utilised by Whooper Swans in winter 2020/21.

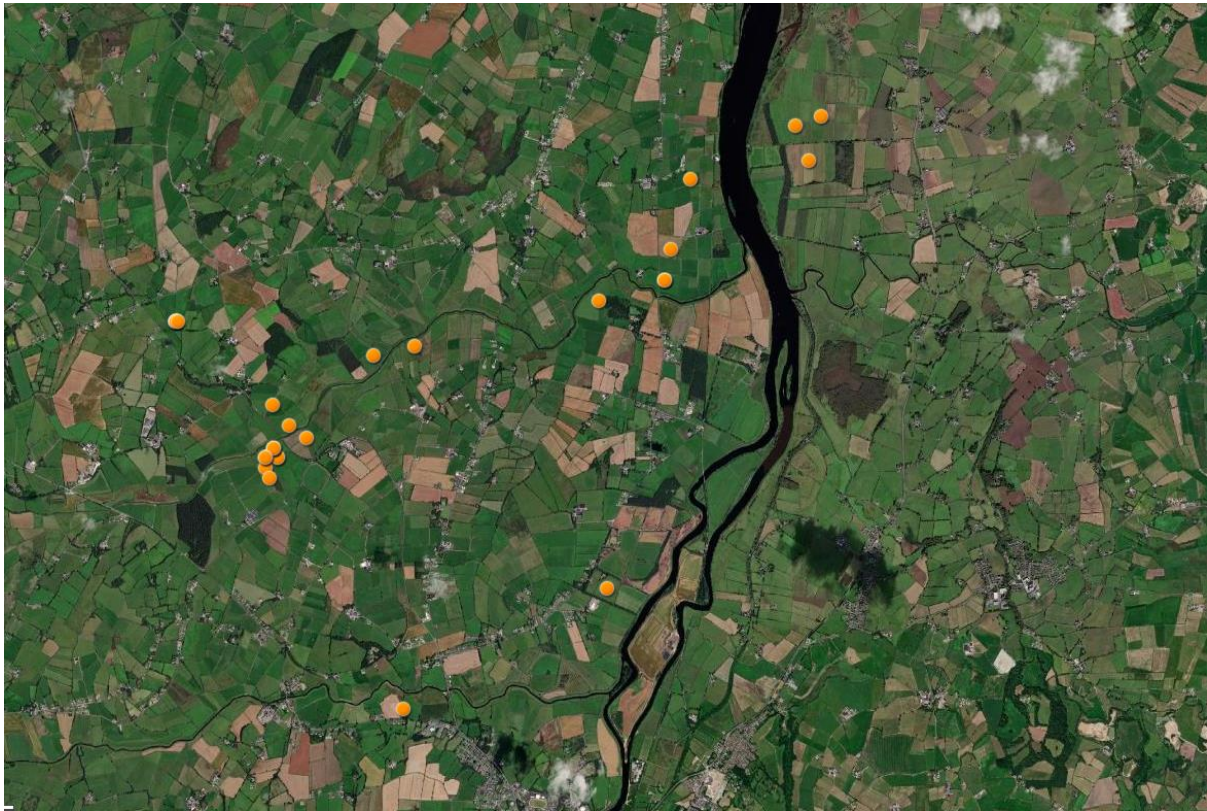


Figure 5. Locations of all Whooper Swan flocks observed November 2020 - April 2021.

5. Discussion

The Foyle/Swilly complex has historically been amongst the most important sites in Ireland for migratory Whooper Swans. Sheppard (1981) described an increasing importance of the site between the mid-1960s and early 1980s. Successive international swan censuses (held at 5-year intervals since 1986) and annual I-WeBS and WeBS monitoring continue to demonstrate the sites importance. Loughs Foyle & Swilly are the top two sites in the country for Whooper Swans (Lewis *et al.* 2019). Waterbird monitoring at River Foyle by I-WeBS and WeBS (of which Swilly Burn/Grange and adjacent sites are a part) has been variable and data were not sought from these schemes for the study reported here. Colhoun (1998) studied wintering swans and geese in this whole complex intensively over four years in the mid-1990s and periodically since. Observations and conclusions here are largely based on this familiarity and knowledge of the behavioural ecology of Whooper Swans in this and other areas.

Since the mid-1990s there has been a reduction in the importance of the Loughs Swilly/Foyle complex and a concomitant increase in populations further south (e.g. midlands); over the same period the overall Whooper Swan flyway population has grown by about 40% (24 years – 1994/95 to around 2018/19). The way by which the River Foyle sites have been utilised has not changed appreciably since the 1960s insofar as irregular transient peaks with very high numbers may occur in autumn likely in relation to the relative landscape-scale availability of waste grain in cereal stubbles in the overall

complex. In drier autumns in which much of the rotational arable habitat is ploughed and resown by early autumn at the main haunts further north (e.g. Inch Levels on Lough Swilly, Myroe on Lough Foyle) but may be available further south then numbers can be considerable. The presence of just a few poorly harvested fields can have a great deal of influence on the short- and medium-term distribution and abundance of birds within the site.

In mid-winter numbers typically increase as birds from further north on the Swilly/Foyle deplete exhaust food resources there and switch foraging to grasslands. Then, as now, the Grange/Swilly Burn area becomes more important and the majority of Whooper Swans in the complex occur here. Between years the importance appears to be dependent primarily on the availability of grassland elsewhere, especially at Inch Levels where the farming system has changed considerable over the decades. When it was arable-dominated in mid-winter in the 2000s (the wetter soils were not resown in the autumn) the absence of grassland meant that the relative importance of the River Foyle sites increased. This has since reverted to the older pattern whereby more birds now remain at Inch Levels as the area has much more extensive areas of grassland again.

In March and April there is normally an increase in the numbers of birds in the area again due to a northward movement of spring migrants staging for a short period on their return to the breeding grounds. The numbers in traditional areas holding larger mid-winter flocks (such as Swilly Burn/Grange) tend to swell with these spring migrants. This was evident in March when a number of individuals were observed having arrived from further south¹.

The availability of extensive areas of partially-harvested waste potatoes adjacent to grasslands has a major influence on the distribution of Whooper Swans throughout Ireland. Within- and between-winter changes in distribution is often dictated by the presence of poorly-harvested crops, ideally within standing water and grasslands adjacent. In open arable-dominated landscapes with good visibility, large fields and access to high-quality roost sites, Whooper Swans numbers can be significant and have a major bearing on the abundance, distribution and movements of flocks within a winter. On a smaller-scale, such as at Swilly Burn, the presence of smaller areas of arable crops such as potatoes can provide local resources which tend to have a short-term localised impact on movements of birds – if these habitats occur in traditionally-used sites. The ephemeral nature of rotational mixed arable cropping systems means that predicting the precise distribution of birds is impossible.

Our monitoring of the N14 corridor in 2020/21 showed that the area is utilised in a similar way to the way it was used over recent decades. The route of road development corridor will be unlikely to have any significant impact on Whooper Swans given the fact that it does not impact on any unique landscape or habitat attribute loss of which would have any impact. In all probability any potato fields in the area with waste crops this or in subsequent autumns in the vicinity will hold these birds. In conclusion, we believe there is no significant of the scheme as currently planned on Whooper Swans.

¹ The arrivals of new birds is often evident in the presence of orange-necked/headed individuals – these are birds which have been feeding on submerged vegetation in ferrous-rich sediments from bogland sites further south



Figure 6. Flock of Whooper Swans at Drumbeg on the N14 corridor, feeding on waste potatoes. Up to 37 birds were recorded here, mostly from mid-December 2020 through to mid-January 2021.



Figure 7. Small Whooper flock at Feddyglass/Swilly Burn bridge on the N14, present regularly through February and March

References

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- Robinson, J.A., K. Colhoun, J.G. McElwaine & E.C. Rees. 2004. *Whooper Swan* *Cygnus cygnus* (Iceland population) in Britain and Ireland 1960/61 – 1999/2000. Waterbird Review Series, The Wildfowl & Wetlands Trust/Joint Nature Conservation Committee, Slimbridge.

Appendix 1 (overleaf)

Locations of flocks of Whooper Swans – showing habitat type (G grass, P potatoes), flock sizes, flock composition (numbers of adults/juveniles and brood sizes, and location (ITM and decimal lat/long). Flocks observed adjacent to the N14 corridor in areas 1 (orange) and 2 (green) are highlighted.

WHOOPER SWAN MONITORING 2020/21: TEN-T (SECT 3)

OBS	MONTH	DATE	TIME	COUNT	SITE TTL	Ads/Juvs (brood sizes)	HAB	OTH	ITM_X	ITM_Y	Lat	LONG	AREA	NOTES
LLO	3 (D)	19/12/2020		35			P		629171	903784	54.881	-7.545	1	
LLO	3 (D)	19/12/2020		2			G		630144	902342	54.867	-7.53	2	
LLO	3 (D)	20/12/2020		13			P		629171	903784	54.881	-7.545	1	
LLO	3 (D)	20/12/2020		29			P		629171	903784	54.881	-7.545	1	
LLO	3 (D)	21/12/2020		13			P		629219	903828	54.881	-7.5446	1	
KColhoun	3 (D)	29/12/2020		25		22-3 (1,1,1)	P		629171	903784	54.881	-7.545	1	
KColhoun	3 (D)	30/12/2020	14:00	15			G		633836	900976	54.8554	-7.473	7	
KColhoun	3 (D)	30/12/2020		37		34-3 (1,1,1)	P		629171	903784	54.881	-7.545	1	
NDuff	4 (J)	09/01/2021	17:30	54	54		G		630220	902380	54.8683	-7.5292	2	
LLO	4 (J)	12/01/2021		11			P		629171	903784	54.881	-7.545	1	
KColhoun	4 (J)	24/01/2021	17:00	0			n/a							snow; no birds
KColhoun	5 (F)	05/02/2021	13:00	21		18-3	G		630250	902440	54.8688	-7.5287	2	
KColhoun	5 (F)	05/02/2021	14:00	92	189		G	GJ: 40	634426	904256	54.8849	-7.4634	5	GJ = Greylag Goose
KColhoun	5 (F)	05/02/2021	14:00	97		93-4	G	GJ: 47	634489	904596	54.8879	-7.4624	5	
KColhoun	5 (F)	05/02/2021	15:40	18	66		G	GJ: 10	635958	905547	54.89637	-7.4394	6	
KColhoun	5 (F)	05/02/2021	15:40	24			G	GJ: 120	635806	905928	54.8998	-7.4417	6	
KColhoun	5 (F)	05/02/2021	15:40	24			G		636086	906018	54.9006	-7.4373	6	
KColhoun	5 (F)	06/02/2021	15:00	52	52	52-0	G	GJ: 145	634426	904256	54.8849	-7.4634	5	
KColhoun	5 (F)	06/02/2021		70			G		634426	904256	54.8849	-7.4634	3	
KColhoun	5 (F)	06/02/2021		5			n/a		630235	902933	54.873	-7.5289	2	in flight
KColhoun	5 (F)	07/02/2021		36		31-5 (1,2,3)	G		630250	902440	54.8688	-7.5287	2	
KColhoun	5 (F)	07/02/2021		20			G		633725	904080	54.883	-7.4744	4	
NDuff	5 (F)	10/02/2021	16:30	108	108		G		630600	902550	54.8698	-7.5232	3	
KColhoun	5 (F)	21/02/2021	14:00	282	282	270-12	G	MS: 13	634695	905344	54.8946	-7.4591	5	MS = Mute Swan
KColhoun	5 (F)	21/02/2021		17		15-2 (2)	G		630158	902394	54.868	-7.53	2	
NDuff	5 (F)	25/02/2021	08:00	10			G		630410	902710	54.871	-7.526	3	
NDuff	5 (F)	25/02/2021	08:00	15	25		G		630250	902440	54.868	-7.528	2	
LLO	6 (M)	03/03/2021		2			G		630158	902394	54.868	-7.53	2	
KColhoun	6 (M)	05/03/2021		31	31	28-3	G		631315	903435	54.877739	-7.51204	3	
KColhoun	6 (M)	05/03/2021		28			G		631755	903540	54.8786	-7.505179	2	
LLO	6 (M)	05/03/2021		3			P		631660	899670	54.84389	-7.50707	OTHER	
LLO	6 (M)	08/03/2021		39			G		630250	902440	54.8688	-7.5287	2	
LLO	6 (M)	13/03/2021		30			G		630210	902121	54.866	-7.5294	2	
LLO	6 (M)	26/03/2021		8			G		630250	902440	54.868	-7.528	2	
KColhoun	7 (A)	07/04/2021		0			n/a							no birds (all gone)

