



SLIGO COUNTY COUNCIL

N.4 Realignment

(Doorly to Drumdoney)

SELECTED OPTION

Impact on Ecology

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1.0 SUMMARY

This report is the third stage in a process to select the best route for the realignment of the N.4 road between Doorly and Drumdoney in County Sligo. The previous ecological reports for the Constraints Study (August 2000) and for the five selected Route Options (April 2001) (see Cotton 2000 & 2001) are used as a basis in the compilation of this report.

The Ecological Report accompanying the Constraints Study identified and briefly described three parts of 'proposed Candidate Special Areas of Conservation' and nine areas not previously recognised for their ecological interest. The Selected Route Option considered by this study will not impact on any of the pCSAC's but will come close to several of the previously unrecognised ecological areas and will clip the site described as "Ardloy Loughs and Aghalenane Lough". It will also cross a small river that was highlighted on the Constraints Study map as the "Drumfin stream at Kingsbrook and Kilmorgan" as well as a number of other small streams.

The second ecological report considered five route options and ranked them according to their perceived impact (route options 4 & 5 having a minimal impact on ecological habitats; route options 1 & 2 having potential impacts that could be minimised with remedial measures; and route option 3 being potentially the most damaging). The Selected Option being considered in this report is a hybrid between Route Option 4 for the south-eastern one-third of the route and Route Option 2 in the north-western two-thirds of the route. The proximity of Route Option 2 to Lackagh Fen at the northern end of the realignment was a small cause of concern in the previous report, but this is diminished by the Selected Option having moved the route a little further west and away from the margins of the fen.

Like Route Option 2, the Selected Option comes very close to the bog and fen habitats associated with Aghalenane Lough, and in fact impinges on the fen at two points. This is a very sensitive area and will need to be given special attention to minimise the damage if road building commences in this area. A suggestion is made to make recompense for the loss of habitat.

It should be said that the methodology adopted in this route selection process has worked well from an ecological perspective as the Constraints Study succeeded in directing Route Options away from sensitive sites. The Selected Route will result in minimal damage to wildlife sites in an area that is rich in having a mosaic of wetland habitats that might otherwise have been difficult to avoid.

2.0 REVIEW OF PREVIOUS WORK

2.1 Introduction

The N4 is the major road linking Sligo and the north-west of Ireland with the capital city of Dublin and the section between Doorly and Drumdoney has been identified as in urgent need of upgrading (Sligo County Council 2000). The course of this 11 kilometer section of road is clearly aligned in a south-easterly to north-westerly direction which exactly parallels the geomorphology of the landscape that was shaped by the passage of ice towards the end of the last glacial phase (Midlandian stadial) of the ice-ages. Features in the area such as drumlins, lakes (including Lough Arrow), marshes, streams and rivers (including the Unshin River) all show this trend. The rich diversity of wetlands adjacent to the current route of the N4 are the legacy of the same glacial history of the landscape and are aligned along the same axis.

2.2 Constraints Study

An ecological appraisal of the entire area that might be affected by the N4 realignment was made in the spring and summer of 2000 and presented to Sligo County Council as an 'Ecological Constraints Study' (Cotton 2000). This report included a literature search, consultation with interested parties, a database search and about two weeks of field work.

Twelve ecological sites were described from within the Constraints Study area. Three of the sites were a part of 'proposed Candidate Special Areas of Conservation' (pCSAC's) but all three were on the fringes of their pCSAC's and a case was made to suggest that Dúchas might redraw the boundaries of two and possibly all three of the sites to allow road construction to proceed, if the need were to arise. Nine sites that had not previously been recognised as having any ecological value were newly described in the report and it was suggested that Dúchas should consider at least three of these locations for designation as new Natural Heritage Areas (NHA's).

The twelve sites were ranked into three categories according to their ecological value :-

- (a) three were considered to be **'Very Important'** ecological sites that should be avoided when planning the new route;
- (b) a further four sites were considered as **'Important'** and it was considered that these might also be worthy of NHA status (one is already a part of a pCSAC). Special measures would have to be taken to minimise damage if the new route were to pass through or next to them;
- (c) the remaining five sites are classified as **'Less Important'**. Two were of the previously identified pCSAC areas that really have no habitats or species of interest but are a part of a buffer zone for important adjoining areas lying outside of the

Constraints Study area. The remaining three pieces of habitat were identified as having ecological value and it was indicated that they should be avoided if at all possible, but the main constraint might be to request that the road design goes some way to lessen the impact if the site can not be avoided.

The locations of the above twelve sites were added to Sligo County Council's Geographical Information System (GIS) database and plotted on a map at a scale of 1:10,000. Two additional minor sites were mapped without being mentioned in the report; these being a piece of willow swamp opposite the Ballymote road junction near Drumfin; and the course of a stream flowing from Kilmorgan northwards and into the Unshin River at Drumfin, hence this stream is referred to as the 'Drumfin stream' in this report.

2.3 Route Options Assessment

In April 2001 a report (Cotton 2001) considered the "Impact on Ecology" of five selected Route Options which had taken into consideration the information relayed in the Constraints Study. No significant field work was undertaken for this report as it relied upon the previous Constraints Study. This ecological report ranked the routes from the least damaging (Route Options 4 & 5), to those causing some damage (Route Options 1 & 2), and finally this report considered that Route Option 3 would most likely cause significant damage to more than one of the 12 ecological sites identified in the Constraints Study.

3.0 ECOLOGICAL IMPACT OF THE SELECTED ROUTE

3.1 The Selected Route

The route selected for comment in the current report is essentially a combination of Route Option 4 for the southern one-third of its course and Route Option 2 for the northern two-thirds of its course with a new link section between them. Due to adjustments of alignment there are small differences in the position of the new routes that have both positive and negative ecological impacts.

3.2 Ecological sites and potential impact

The sites of ecological interest near to the Selected Route were all described in the Constraints Study with no new areas being found during the small amount of field work required for this study.

Going from north-west to south-east, there are six places of ecological interest that fall within the potential influence of the route (within 100m i.e. 1cm on the map with a scale of 1:10,000) which are described in the following sub-sections.

3.2.1 Lackagh Fen near Drumfin (G6922) is a substantial area dominated by sedges with a slightly more acid flora at the northern end and a more alkaline flora at the southern end. This fen is considered as an 'Important' ecological site that could be worthy of NHA status (see Cotton 2001). The original course of Route Option 2 ran along the western boundary of this site, but the Selected Route is now about 80m away and there is a buffer zone of dry pasture between the proposed road and the fen. In the circumstances there should be no impact of road building on this fen as long as the road construction doesn't interfere with the natural drainage or allow mud and silt to enter watercourses to the fen.

3.2.2 Boathole Lough & Lough Corran, Drumfin (G6920) at the nearest point lies about 150m to the west of the proposed route. Currently these lakes are quite isolated from regular human disturbance and in the previous report it was anticipated they might hold overwintering wildfowl which could be affected by the proximity of a major road. Two surveys of the wildfowl have now been completed (8 December 2001 and 10 January 2002) and some unpublished data has been accessed (winter 1988/1989) (Goodwillie *et al.* 1992). These data (see Appendix 1a) show that the lakes to hold a good selection of wildfowl with particularly high numbers of little grebe considering their small surface area (counts of 12, 19 and 21 birds when data from the two lakes are combined). It was noted that Boathole Lough is the more important for little grebe and that it lies about 400m from the proposed road. A count of 5 whooper swans on one occasion during the winter of 1988/1989 is interesting because this species is listed for protection in the EU Bird's Directive (79/409/EEC). The impact of the road is likely to be small because of its distance from the water's edge and because it will be set in a shallow cutting in the area just opposite Lough Corran. Additional measures to reduce the impact could include the planting of a shelter belt of fast-growing trees such as alder or ash with a hedge of hawthorn or blackthorn to act as a buffer between the road and the lake.

The outfall stream from Lough Corran is to be crossed by the proposed road and this will need to be protected from detrimental material entering the water during road construction as the stream flows into the River Unshin SAC less than 1 kilometer downstream.

3.2.3 The Drumfin stream (below Kingsbrook and Kilmorgan) is also to be crossed by the proposed road, and in addition, the road will run a parallel course to this water course for about 900m. As with the stream leaving Lough Corran, the Drumfin stream feeds into the Unshin River SAC about 2 kilometers below the new road crossing. Precautions will be needed to ensure that soil or cement products don't enter the stream during road construction and that if possible, the flora of the stream bank should be disturbed as little as possible.

3.2.4 Cuilleencroobagh Lough (G727176) is more like a quaking bog or scraw than a lake as the open water area has almost totally become covered

in floating vegetation. The proposed road will pass about one hundred meters away from the bog along the side of a hill. The road should have no impact on this habitat.

3.2.5 Ardloy Loughs and Aghalenane Lough (G7317) were described in the Constraints Study (Cotton 2000) as being an 'Important' ecological site possibly worthy of consideration by Dúchas as a Natural Heritage Area. This site comprises two small lakes (Ardloy Loughs) and a larger lake (Aghalenane Lough) which are surrounded by a fringe of tall reeds beyond which there is a marsh which is dominated by sedges. At the northern end of the site there is an area of acid peat bog, and at the south-western side there are some calcareous flushes feeding into the sedge fen. The water quality of the lakes is a cause for concern as it is suspected there is an organic source of pollution feeding into Ardloy Lough (south).

The Selected Option for realignment of the N4 road will pass through the western edge of this site where there are calcium-rich springs feeding into the sedge fen. The site was therefore visited again in order to re-assess the value of the area to be affected by the road. Counts of the wildfowl were also made on two occasions (8 December 2001 and 10 January 2002) and some data was accessed from a study during the winter of 1988/1989 (Goodwillie *et al.* 1992).

The number of wildfowl utilising this site was very low with none being present on either 9 December 2000 or on 8 December 2001, and only a few ducks being present on 10 January 2002 (see Appendix 1b). The data of Phil Buckley for the winter of 1988/1989 recorded peak counts of 35 wigeon, 54 teal and 19 lapwing (Goodwillie *et al.* 1992) indicating that wildfowl do resort to using this area on some occasions. This would not be regarded as an important site for wildfowl and the impact of the road will be minimal.

Vegetation is not easily surveyed during the winter but the observation that between 40-50% of Aghalenane Lough is surrounded by the great fen sedge (*Cladium mariscus*) was a surprising result. This species is quite uncommon in the Sligo-Leitrim area and is generally regarded as a good indicator of fen conditions so the extent of its occurrence is worthy of comment. The low sedge fen is reasonably extensive here and it is a part of this habitat that will be lost to the road along with a fragment of the acid bog in the north-western corner. The loss of these pieces of habitat are sustainable as long as the flow of spring water that is feeding into the fen from the western side is maintained.

When the road is completed it is noted that areas of sedge fen and acid bog will be isolated between the lake and the new road. These places do not appear to be in agricultural production at the current time and it is proposed that they should be compulsorily purchased by the County Council to be protected for their conservation value. They will be almost self-sustainable and will only require a very minimal amount of management.

3.2.6 Drumderry near Castlebaldwin (G749155) is a small bog and marsh with limited ecological interest. The proposed road will run about 30m from a corner of this marsh and should not directly affect the habitat unless the road impacts upon the natural drainage of the area.

3.3 Protected species

Conservation is largely about the protection of important habitats, but sometimes rare and uncommon species may be present outside of recognisably good pieces of habitat. It is therefore important to look for species that are afforded protection or are listed as in need of protection.

The Irish Red Data Book for Vascular Plants (Curtis & McGough 1988) and the Flora Protection Order (1987) list no species that are known from this area or were found during the field work for the Constraints Study.

The Irish Red Data Book for vertebrates (Whilde 1993) includes quite a number of species that are fairly common and widespread in Ireland and could be affected by almost any large-scale proposal such as a road. The following list of species which most likely all occur in the vicinity of the proposed realignment of the N4 are presented for the sake of making this report fully comprehensive :

Common name	Scientific name	Red Data Book category
Hedgehog	<i>Erinaceus europaeus</i>	Internationally important
Daubenton's bat	<i>Myotis daubentonii</i>	Internationally important
Pipistrelle	<i>Pipistrellus pipistrellus</i>	Internationally important
Brown long-eared bat	<i>Plecotus auritus</i>	Internationally important
Irish hare	<i>Lepus timidus hibernicus</i>	Internationally important
Badger	<i>Meles meles</i>	Internationally important
Otter	<i>Lutra lutra</i>	Internationally important
Common frog	<i>Rana temporaria</i>	Internationally important

It would not be practical to take serious measures to protect such species as the common frog, badger, hedgehog, pipistrelle bat or Irish hare. However, some of these species should really be given careful consideration when examining the potential impact of this road realignment. Spraints (droppings) of the otter were noted at several locations along the streams in the area but no holts were found. Daubenton's bats are uncommon but have been recorded as being associated with the nearby Unshin River.

The Red List of bird species now stands at 18 with a further 77 species 'Amber' listed (Newton *et al.* 2000). There are no red listed bird species breeding in this area but it is always possible that barn owl could be breeding outside of the Constraints Area and feeding in the immediate vicinity.

3.4 Impacts during the construction phase

Sections 3.2 and 3.3 have discussed the likely impact of the proposed route on the ecology of this area but from previous experience it has been noted

that unexpected damage to ecological sites can come about during the construction phase. The most likely cause of damage to habitat comes about through the siting of storage yards, disposal of spoil and the construction of access roads. It must be stressed that when these places are being selected an ecologist should be consulted to determine whether any damage will be done to sensitive pieces of habitat.

3.5 Summary of Ecological Impacts

Six sites with some ecological interest fall within 100m of the route of the proposed road. Although there are two Special Areas of Conservation nearby, neither will be affected by the presence of the road or by its construction, as long as deleterious materials are prevented from being washed into water courses and on into the Unshin River SAC. Of the six sites described in this report (sections 3.3.1 - 3.3.6) none have any form of statutory protection and in the Constraints Study none were identified as being 'Very Important'. Of the two classified as 'Important' only "Ardloy Loughs and Aghalenane Lough" will be adversely affected by the Selected Route. A part of the sedge fen, acid bog and spring flushes will be lost under the road and the remaining sedge fen and acid bog will become sandwiched between the road and Aghalenane Lough. These areas are currently not being farmed and it is suggested that they be purchased for the purpose of nature conservation as recompense for the areas that will be lost.

3.6 Comment on use of Constraints Study

The approach taken during this ecological assessment has been very successful. By requesting a Constraints Study it brought the ecologist in at a very early stage in the process and allowed great freedom to find the habitats and species that might be adversely impacted by the realignment project. The Constraints Study area turned out to have several very interesting pieces of habitat which were identified and surveyed for the first time. The information gained should be very helpful to Dúchas - the Heritage Service. In turn, this approach resulted in the Route Options as identified by the engineers to be largely acceptable on ecological grounds and the Selected Route has similarly proven to be ecologically friendly with only a minimal predicted impact on flora and fauna.

4.0 REFERENCES

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- WHILDE, A. (1993) *Threatened Mammals, Birds, Amphibians and Fish in Ireland. Irish Red Data Book 2: Vertebrates.* HMSO, Belfast.

Appendices

Additional ecological data relevant to sites visited during this study.

- a) Boathole Lough & Lough Corran, Drumfin (G6920) (first sheet)
- b) Ardloy Loughs and Aghalenane Lough (G7317) (second sheet)

SCIENTIFIC NAME	COMMON NAME	No.	LOCATION	Co.	MAP REF	DATE	NOTES
<i>Anas stagnalis</i>		c10	Lough Corran, Drumfin	Sligo	G 698 209	06/05/2000	Common
<i>Rhosoma nymphula</i>		c20	nr Boathole Lough and Lough Corran, Drumfin	Sligo	G 698 206	06/05/2000	
<i>Alisma cyathigerum</i>		c10	Lough Corran, Drumfin	Sligo	G 698 209	29/07/1981	
<i>Ischnura elegans</i>		3	Lough Corran, Drumfin	Sligo	G 698 209	29/07/1981	Small shoal.
<i>Percia fluviatilis</i>	Perch		river leaving Lough Corran	Sligo	G 70 21	29/07/1981	
<i>Rana temporaria</i>	Common frog	1	nr Boathole Lough and Lough Corran, Drumfin	Sligo	G 698 206	06/05/2000	
<i>Chybaptus ruficollis</i>	Little grebe	12	Boathole Lough and Lough Corran, Drumfin	Sligo	G 69 20		Winter 1988/89. Maximum c
<i>Tachybaptus ruficollis</i>	Little grebe	19	Boathole Lough, Drumfin	Sligo	G 696 206	08/12/2001	Total widfowl count.
<i>Tachybaptus ruficollis</i>	Little grebe	14	Boathole Lough, Drumfin	Sligo	G 696 206	10/01/2002	Total widfowl count.
<i>Chybaptus ruficollis</i>	Little grebe	2	Lough Corran, Drumfin	Sligo	G 698 209	08/12/2001	Total widfowl count. Heard.
<i>Chybaptus ruficollis</i>	Little grebe	5	Lough Corran, Drumfin	Sligo	G 698 209	10/01/2002	Total widfowl count.
<i>Podiceps cristatus</i>	Great crested grebe	1	Lough Corran, Drumfin	Sligo	G 698 209	06/05/2000	Total widfowl count.
<i>Phalacrocorax carbo</i>	Cormorant	1	Lough Corran, Drumfin	Sligo	G 698 209	06/05/2000	Total widfowl count.
<i>Ardea cinerea</i>	Grey heron	1	Boathole Lough and Lough Corran, Drumfin	Sligo	G 69 20		Winter 1988/89. Maximum c
<i>Cygnus olor</i>	Mute swan	11	Boathole Lough and Lough Corran, Drumfin	Sligo	G 69 20		Winter 1988/89. Maximum c
<i>Cygnus olor</i>	Mute swan	1	Boathole Lough, Drumfin	Sligo	G 696 206	06/05/2000	Total widfowl count. Male.
<i>Cygnus olor</i>	Mute swan	10	Boathole Lough, Drumfin	Sligo	G 696 206	08/12/2001	Total widfowl count. 2 adult
<i>Cygnus olor</i>	Mute swan	8	Boathole Lough, Drumfin	Sligo	G 696 206	10/01/2002	Total widfowl count. 2 adult
<i>Cygnus olor</i>	Mute swan	1	Lough Corran, Drumfin	Sligo	G 698 209	06/05/2000	Total widfowl count. Male.
<i>Cygnus olor</i>	Mute swan	1	Lough Corran, Drumfin	Sligo	G 698 209	10/01/2002	Total widfowl count. Juven
<i>Cygnus olor</i>	Mute swan	1	Lough Corran, Drumfin	Sligo	G 69 20		Winter 1988/89. Maximum c
<i>Cygnus cygnus</i>	Whooper swan	5	Boathole Lough and Lough Corran, Drumfin	Sligo	G 69 20		Winter 1988/89. Maximum c
<i>Tringa penelope</i>	Wigeon	10	Boathole Lough and Lough Corran, Drumfin	Sligo	G 69 20		Winter 1988/89. Maximum c
<i>Tringa penelope</i>	Wigeon	1	Boathole Lough, Drumfin	Sligo	G 696 206	10/01/2002	Total widfowl count.
<i>Tringa crecca</i>	Teal	32	Boathole Lough and Lough Corran, Drumfin	Sligo	G 69 20		Winter 1988/89. Maximum c
<i>Anas platyrhynchos</i>	Mallard	8	Boathole Lough and Lough Corran, Drumfin	Sligo	G 69 20		Winter 1988/89. Maximum c
<i>Anas platyrhynchos</i>	Mallard	8	Boathole Lough, Drumfin	Sligo	G 696 206	06/05/2000	Total widfowl count. 7 male
<i>Anas platyrhynchos</i>	Mallard	7	Lough Corran, Drumfin	Sligo	G 698 209	06/05/2000	Total widfowl count. 7 male
<i>Anas platyrhynchos</i>	Mallard	19	Lough Corran, Drumfin	Sligo	G 698 209	08/12/2001	Total widfowl count.
<i>Anas platyrhynchos</i>	Mallard	4	Lough Corran, Drumfin	Sligo	G 698 209	10/01/2002	Total widfowl count.
<i>Anas platyrhynchos</i>	Mallard		nr Boathole Lough and Lough Corran, Drumfin	Sligo	G 702 201	06/05/2000	Female with ducklings.
<i>Aythya fuligula</i>	Tufted duck	6	Boathole Lough and Lough Corran, Drumfin	Sligo	G 69 20		Winter 1988/89. Maximum c
<i>Aythya fuligula</i>	Tufted duck	1	Boathole Lough, Drumfin	Sligo	G 696 206	10/01/2002	Total widfowl count.
<i>Aythya fuligula</i>	Tufted duck	1	Lough Corran, Drumfin	Sligo	G 698 209	10/01/2002	Total widfowl count.
<i>Rallus aquaticus</i>	Water rail	2	Boathole Lough and Lough Corran, Drumfin	Sligo	G 69 20		Winter 1988/89. Maximum c
<i>Rallus aquaticus</i>	Water rail	1	Boathole Lough, Drumfin	Sligo	G 696 206	08/12/2001	Total widfowl count. Heard.
<i>Gallinula chloropus</i>	Moorhen	16	Boathole Lough and Lough Corran, Drumfin	Sligo	G 69 20		Winter 1988/89. Maximum c
<i>Gallinula chloropus</i>	Moorhen	5	Boathole Lough, Drumfin	Sligo	G 696 206	08/12/2001	Total widfowl count.
<i>Gallinula chloropus</i>	Moorhen	3	Boathole Lough, Drumfin	Sligo	G 696 206	10/01/2002	Total widfowl count.
<i>Gallinula chloropus</i>	Moorhen	1	Lough Corran, Drumfin	Sligo	G 698 209	06/05/2000	Total widfowl count. Heard.
<i>Fulica atra</i>	Coot	2	Boathole Lough and Lough Corran, Drumfin	Sligo	G 69 20		Winter 1988/89. Maximum c
<i>Fulica atra</i>	Coot	1	Boathole Lough, Drumfin	Sligo	G 696 206	06/05/2000	Total widfowl count.
<i>Fulica atra</i>	Coot	1	Boathole Lough, Drumfin	Sligo	G 696 206	10/01/2002	Total widfowl count.
<i>Vanelus vanellus</i>	Lapwing	1	Boathole Lough and Lough Corran, Drumfin	Sligo	G 698 209	10/01/2002	Total widfowl count.
<i>Gallinago gallinago</i>	Snip	23	Lough Corran, Drumfin	Sligo	G 69 20		Winter 1988/89. Maximum c
<i>Gallinago gallinago</i>	Snip	1	Boathole Lough and Lough Corran, Drumfin	Sligo	G 696 206	10/01/2002	Total widfowl count.
<i>Gallinago gallinago</i>	Snip	1	Boathole Lough, Drumfin	Sligo	G 696 206		1989 breeding survey showe
<i>Gallinago gallinago</i>	Snip	26	Lough Corran, Drumfin	Sligo	G 698 209		1989 breeding survey showe
<i>Gallinago gallinago</i>	Snip	1	nr Boathole Lough and Lough Corran, Drumfin	Sligo	G 698 206	06/05/2000	Flushed from bog.
<i>Acrocephalus</i>	Sedge warbler	4	nr Boathole Lough and Lough Corran, Drumfin	Sligo	G 698 206	06/05/2000	Singing. Another two at othe
<i>Emberiza schoeniclus</i>	Reed bunting		Boathole Lough, Drumfin	Sligo	G 696 206	08/12/2001	Heard.
<i>Emberiza schoeniclus</i>	Reed bunting	1	Lough Corran, Drumfin	Sligo	G 698 209	10/01/2002	
<i>Emberiza schoeniclus</i>	Reed bunting	4	nr Boathole Lough and Lough Corran, Drumfin	Sligo	G 698 206	06/05/2000	

SCIENTIFIC NAME	COMMON NAME	No.	LOCATION	Co.	MAP REF	DATE	NOTES
<i>Ardea cinerea</i>	Grey heron	2	Ardloy Loughs & Aghalenane Lough	Sligo	G 73 17	08/12/2001	Total wildfowl count. Flying
<i>Ardea cinerea</i>	Grey heron	1	Ardloy Loughs & Aghalenane Lough	Sligo	G 73 17	10/01/2002	Total wildfowl count. Flying
<i>Cygnus olor</i>	Mute swan	2	Ardloy Lough (east)	Sligo	G 733 171	08/12/2001	Total wildfowl count. Adults
<i>Anas penelope</i>	Wigeon	35	Ardloy Loughs & Aghalenane Lough	Sligo	G 73 17		Winter 1988/89. Maximum c
<i>Anas penelope</i>	Wigeon	7	Aghalenane Lough	Sligo	G 73 17	10/01/2002	Total wildfowl count.
<i>Anas crecca</i>	Teal	54	Ardloy Loughs & Aghalenane Lough	Sligo	G 73 17		Winter 1988/89. Maximum c
<i>Anas platyrhynchos</i>	Mallard	9	Ardloy Loughs & Aghalenane Lough	Sligo	G 73 17		Winter 1988/89. Maximum c
<i>Anas platyrhynchos</i>	Mallard	2	Aghalenane Lough	Sligo	G 73 17	10/07/2000	
<i>Anas platyrhynchos</i>	Mallard	2	Ardloy Loughs	Sligo	G 73 17	10/07/2000	
<i>Anas platyrhynchos</i>	Mallard	5	Aghalenane Lough	Sligo	G 73 17	10/01/2002	Total wildfowl count.
<i>Anas platyrhynchos</i>	Mallard	2	Ardloy Lough (west)	Sligo	G 732 171	10/01/2002	Total wildfowl count.
<i>Aythya fennae</i>	Pochard	4	Ardloy Loughs & Aghalenane Lough	Sligo	G 73 17		Winter 1988/89. Maximum c
<i>Accipiter nisus</i>	Sparrowhawk	1	Ardloy Lough (east)	Sligo	G 733 171	20/06/1981	
<i>Accipiter nisus</i>	Sparrowhawk		Ardloy Lough (east)	Sligo	G 733 171	31/07/1981	Breeding.
<i>Gallinula chloropus</i>	Moorhen	3	Ardloy Loughs & Aghalenane Lough	Sligo	G 73 17		Winter 1988/89. Maximum c
<i>Gallinula chloropus</i>	Moorhen		Ardloy Lough (east)	Sligo	G 733 171	20/06/1981	Nest photographed.
<i>Gallinula chloropus</i>	Moorhen		Ardloy Loughs	Sligo	G 73 17	10/07/2000	With family.
	no wildfowl	0	Aghalenane Lough	Sligo	G 73 17	09/12/2000	Total wildfowl count.
<i>Gallinula chloropus</i>	Moorhen	2	Ardloy Lough (east)	Sligo	G 733 171	09/12/2000	Total wildfowl count.
	no wildfowl	0	Aghalenane Lough	Sligo	G 73 17	08/12/2001	Total wildfowl count.
<i>Vanelus vanellus</i>	Lapwing	19	Ardloy Loughs & Aghalenane Lough	Sligo	G 73 17		Winter 1988/89. Maximum c
<i>Gallinago gallinago</i>	Snipe	6	Ardloy Loughs & Aghalenane Lough	Sligo	G 73 17		Winter 1988/89. Maximum c
<i>Numenius arquata</i>	Curlew	8	Ardloy Loughs & Aghalenane Lough	Sligo	G 73 17		Winter 1988/89. Maximum c
<i>Riparia riparia</i>	Sand martin	1	Ardloy Loughs & Aghalenane Lough	Sligo	G 73 17	10/07/2000	
<i>Troglodytes troglodytes</i>	Wren	1	Ardloy Loughs	Sligo	G 73 17	10/07/2000	Heard.
<i>Saxicola torquata</i>	Stonechat	4	Ardloy Loughs	Sligo	G 73 17	10/07/2000	Family.
<i>Acrocephalus</i>	Sedge warbler		Ardloy Lough (east)	Sligo	G 733 171	20/06/1981	
<i>Acrocephalus</i>	Sedge warbler	1	Ardloy Loughs	Sligo	G 73 17	10/07/2000	Singing.
<i>Phylloscopus trochilus</i>	Willow warbler	1	Ardloy Loughs	Sligo	G 73 17	10/07/2000	
<i>Carduelis cannabina</i>	Linnet	2	Ardloy Loughs	Sligo	G 73 17	10/07/2000	
<i>Emberiza schoeniclus</i>	Reed bunting		Ardloy Loughs	Sligo	G 73 17	10/07/2000	Singing.



SLIGO COUNTY COUNCIL

**N.4 Realignment
Cloonamahon to Castlebaldwin**

CONSTRAINTS STUDY

Ecological Report

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August 2000

N4 CONSTRAINTS STUDY

ECOLOGICAL REPORT

1.0 SUMMARY

This short report and accompanying map identifies sites of ecological interest that fall within the Constraints Study Area for the N4 Realignment (Cloonamahon to Castlebaldwin) as identified by engineering staff of Sligo County Council.

A literature search for publications of relevance to the flora and fauna of the area was undertaken which included the identification of areas designated by Duchas (the Heritage Service) as being of ecological importance (pNHA's, pCSAC's).

A privately held database of unpublished records was also accessed which holds records of some uncommon and rare species that are known from within the Constraints Study Area.

A meeting was held with an official of the wildlife section of Duchas to help identify habitats, species and issues that should be addressed by this report.

Field work was undertaken during the months of June and July 2000 to visit previously known ecological sites and identify other pieces of habitat that might hold interesting species or that are valuable in their own right. As a result, this report describes three parts of 'proposed Candidate Special Areas of Conservation' (pCSAC's) that come within the Constraints Study Area and in addition identifies nine areas that have not previously been officially recognised for their ecological interest.

Two, and possibly all three of the areas within pCSAC boundaries are considered to extend beyond the ecologically sensitive area and a case could be made for their boundaries to be re-drawn. On the other hand, six of the newly recognised areas are good enough to be considered for NHA status. Boundaries for all twelve ecological sites have been marked on the accompanying map which can now be entered on the County Council Geographical Information System to assist in route selection. To assist in interpretation, the sites are classified as "Very Important", "Important" and "Less Important" and colour-coded on the map to reflect this provisional status.

2.0 INTRODUCTION

2.1 Aims and objectives

The primary aim of this study is to ensure that habitats of ecological interest are identified before routes are selected for the re-alignment of the N.4 between Cloonamahon and Castlebaldwin. The main outcome of this report is an ecological constraints map showing the boundaries of such ecological sites.

2.2 Sources of information

Scientific publications concerning the natural environment of Counties Sligo and Leitrim have been thoroughly researched by the author over the past 20 years and out of over 1800 papers sourced relevant information has been abstracted that makes reference to locations within the constraints study area.

A computer data base containing almost 60,000 observations of flora and fauna in the Sligo/Leitrim region has also been established by the author and a number of records were found to be of relevance.

Unpublished sources like the reports on *Areas of Scientific Interest* (An Foras Forbartha 1972, 1978 & 1981) and information on the *proposed Candidate Special Areas of Conservation* and *proposed Natural Heritage Areas* (Heritage Service 1997) have been checked. Small parts of two pCSAC's fall within the constraints study area, namely the Unshin River (pCSAC 1898) and the Bricklieve Mountains (pCSAC 1656). The north-western corner of Lough Arrow (pNHA 1673) is not far away from the constraints study area but it is considered by the author that it will not be affected by road building operations.

Parties known to be interested in the environment were also contacted i.e. Sligo Branches of An Taisce and BirdWatch Ireland, Sligo Field Club and the Sligo County Recorder (for botany). A minuted briefing meeting was held on 17 April 2000 with Mr David Duggan of The National Parks and Wildlife Service of Duchas who provided detailed maps of the Unshin River pCSAC (dated 17/08/1999).

One can never guarantee that every potential source of information has been tapped or that the area hasn't been visited by a naturalist/ecologist and the results not published. Serious deficiencies can be overcome by field visits and so between June and July 2000 field work was undertaken to thoroughly cover this extensive area which included visits to each of the proposed pCSAC's just mentioned.

3.0 ENVIRONMENTAL SETTING

3.1 Introduction

This section is intended to give a simple environmental overview for someone who is unfamiliar with the general area where the improved road will run between Cloonamahon (G6923) and Castlebaldwin (G7613) (Discovery Series 1:50,000 Sheet 25). The approximate area involved is 16.7 square kilometers (c.13 km long x c.1.3 km wide). It identifies potential ecological sites and species that might be in the area, or are already known in the area, through which the new road may be routed. Special consideration is given to sites and species protected by legislation.

3.2 Geology & Geomorphology

The underlying hard rock geology of this area is very simple in that it is entirely composed of the Bricklieve Limestone Formation of Carboniferous age (Dinantian) which dates from about 300 million years ago. This rock is very nearly horizontally bedded as can be seen from a diagram showing a cross-section of the rock strata in this area (section C-D) on the map accompanying Macdermot, Long & Harney (1996). The original data for this map largely come from the field work of Dixon (1965 & 1972).

The hard rock is little exposed within the constraints study area because it is overlain by a layer of glacial deposits of recent origin (c.20,000 years old) and which are of variable thickness. The most obvious glacial formations are the drumlins that are aligned from south-east to north-west reflecting the direction of the Midlandian ice movement. At Castlebaldwin a drumlin has been excavated opposite to the petrol filling station which reveals the unconsolidated nature of these deposits.

The course of the current N4 road is largely dictated by the alignment of the drumlins and the new route will likewise be greatly influenced by this topography.

3.3 Natural drainage

The drainage of this area is dictated by the trend of the glacial deposits with the result that there are a number of lakes, fens and bogs in the inter-drumlin hollows which align in a south-east to north-west direction e.g. Cleavry Lough and bog and Loughmeenaghan. The streams all drain to the north-west and into the Unshin River which is a part of the Ballysadare River catchment. The influence of the underlying limestone has resulted in a few swallow holes, temporary winter ponds (turloughs) and springs, especially in the southern part of the constraints study area where the Bricklieve Mountains form the border of the study area.

Water quality in the area is generally quite good but signs of eutrophication were present in many of the streams around Kingsbrook and feeding into

Boathole Lough. The two small Ardloy Loughs and Aghalenane Lough had a very bad smell when visited on 10 July and the water was seen to be black in colour. These lakes appear to be seriously organically polluted.

3.4 Landscape

The Bricklieve Mountains are a highly scenic area and are listed in the inventory of outstanding landscapes (An Foras Forbartha 1977). The most recent County Development Plan also identified them as being of a high landscape character and to be protected through stringent planning criteria (Sligo County Council 2000).

3.5 Flora and fauna

During the field work, a majority of the area was dismissed as being of no especial ecological interest. This was because the area is intensively farmed with most fields being improved pasture separated by hedgerows of hawthorn (*Crataegus monogyna*) or blackthorn (*Prunus spinosa*) of a young age and of a poor ecological diversity. Places that held promise were noted on the map and a closer inspection was made of them. These locations include lakes, marshes, fens, turloughs, raised bogs, hedgerows, unimproved pasture, mature trees, bridges and old buildings.

A special watch was kept for rare species that might potentially be expected in the area. Hedgerow shrubs such as spindle (*Euonymus europaeus*), guelder rose (*Viburnum opulis*), buckthorn (*Rhamnus catharticus*); invertebrates such as freshwater crayfish (*Austropotamobius pallipes*), vertigo snails, marsh fritillary butterfly (*Euphydryas aurinia*), hairy dragonfly (*Brachytron pratense*), black-tailed skimmer (*Orthetrum cancellatum*), scarce blue-tailed damselfly (*Ischnura pumilio*); birds like whinchat, lapwing, owls; and mammals like otter, pine martin, red squirrel and signs of bats.

Especial ecological habitats are dealt with in more detail in Section 4 of this report and results of field surveys are in the Appendix.

3.6 Habitats and species covered by legislation

There are no Important Bird Areas (IBA's) or Special Protection Areas (SPA's) as designated under the EU Bird's Directive (79/409/EEC) within many kilometres of any of the proposed options. There are no National Nature Reserves (NNR's) anywhere in the vicinity.

In the original reports on Area of Scientific Interest (ASI's) (An Foras Forbartha 1972, 1978 & 1981), the Bricklieve Mountains and parts of Lough Arrow are listed as being of ecological interest. These areas both fall close to the constraints study area. The original ASI's are now being replaced by 'proposed Natural Heritage Areas' (pNHA's) and if of relevance to the European Union Habitats Directive (92/43/EEC) they may also be listed as 'proposed Candidate Special Areas of Conservation' (pCSAC's). The

Bricklieve Mountains are designated as pCSAC 1656 and the Unshin River is designated as pCSAC 1898. Lough Arrow is designated as pNHA 1673 but is too far away to be affected by the route selection so is considered no further in this report.

The Irish Red Data Book for Vascular Plants (Curtis & McGough 1988) and the Flora Protection Order (1987) list no species that are known from this area or were found during the recent field work.

The Irish Red Data Book for vertebrates (Whilde 1993) includes quite a number of species that are fairly common and widespread in Ireland and could be affected by almost any large-scale proposal such as a road. The Red List of bird species is currently being extended to include a further six species bringing it up to eighteen species (Newton *et al.* in press). The following list of species which most likely all occur in the vicinity of the proposed realignment of the N4 are presented for the sake of making this report fully comprehensive :

Common name	Scientific name	Red Data Book category
Hedgehog	<i>Erinaceus europaeus</i>	Internationally important
Daubenton's bat	<i>Myotis daubentonii</i>	Internationally important
Pipistrelle	<i>Pipistrellus pipistrellus</i>	Internationally important
Brown long-eared bat	<i>Plecotus auritus</i>	Internationally important
Irish hare	<i>Lepus timidus hibernicus</i>	Internationally important
Badger	<i>Meles meles</i>	Internationally important
Otter	<i>Lutra lutra</i>	Internationally important
Common frog	<i>Rana temporaria</i>	Internationally important

Whilst there are no recent records, lapwing and barn owl are red-listed species that could be breeding in this area.

It would not be practical to take serious measures to protect such species as the common frog, badger, hedgehog, pipistrelle bat or Irish hare. However, some of these species should really be given careful consideration when examining the potential impact of this road realignment. These include the otter (and its holts) and the Daubenton's bat that are uncommon and are associated with rivers like the Unshin.

4.0 BRIEF DESCRIPTION OF ECOLOGICAL SITES WITHIN THE CONSTRAINTS STUDY AREA

4.1 Introduction

This section is designed to give a simple outline of the ecological value of sites identified within the constraints study area. It is a compilation of notes and observations made during field work that have been integrated with any published information to produce short descriptive accounts. An attempt is made to indicate the degree of interest of each site by classifying it as either 'Very Important', 'Important' or 'Less Important'. In some instances the description points to locations within a site that are of particular value.

4.2 Lisconny Bridge near Collooney (Unshin River pCSAC) (G695229)

At the very northern end of the constraints study area the boundary cuts through a triangular area of the Unshin River proposed Candidate SAC. On the ground the area is defined on one side by the passage of a high voltage electricity line, on another side by a minor county road and on the third side by a hedgerow between fields. The site was surveyed in detail and in ideal conditions on 17 July 2000. It was observed that the area comprises of two pasture fields of a very ordinary appearance within the area being considered for this constraints study. The list of species includes no interesting flora or fauna. The higher (western) area is dominated by common meadow grasses with some rushes (*Juncus effusus*) and ragwort (*Senecio jacobaea*). The lower pasture field was being grazed by horses, and in the section within the constraints study area, was dominated by yellow flag (*Iris pseudacorus*), meadowsweet (*Filipendula ulmaria*), creeping thistle (*Cirsium arvense*), docks (*Rumex* spp.) and ragworts (*S. aquaticus* & *S. jacobaea*). The lower part of the same field, which is downhill from the electricity line, was not surveyed but was observed to hold an interesting flora running down to the Unshin River and its riparian zone. It is considered that the pCSAC boundary in this area could be realigned to de-designate the area to the west of the power lines and that the location could be considered for road construction. If this becomes necessary then the County Council would have to be very aware that there would be no buffer zone between the rich and diverse flora of the remaining pCSAC and the road and special precautions would be needed during road construction. This area is considered 'Less Important' as an ecological site for this constraints study.

4.3 Lackagh Fen near Drumfin (G6922)

This previously unrecognised ecological site has a diverse and rich flora dominated by sedges. The most common sedge present was lesser tussock sedge (*Carex diandra*) which is actually quite uncommon in north-west Ireland. Whilst there were no rare plants or animals found in the site, the area involved is quite large and the floral diversity is such that this habitat is a good example of a sedge fen and should be protected. It is recommended

that Duchas consider this location as a Natural Heritage Area of Local Importance.

It is worth noting that the wettest part of the site is along the north-eastern boundary close to the existing N4 road and this is also the most valuable area to wildlife. It was also noted that there appears to be a clinal change from a more alkaline flora to a more acid flora as one goes from south-east to north-west. There may well be a ground water source at the south-eastern end of the site where meadow thistle (*Cirsium dissectum*), yellow rattle (*Rhinanthus minor*), early marsh orchid (*Dactylorhiza incarnata incarnata*), carnation sedge (*Carex panicea*), congested rush (*Juncus conglomeratus*) and marsh lousewort (*Pedicularis palustris*) are found. Marsh fritillary butterfly (*Euphydryas aurinia*) has been noted here in the past. The site drains to the north-west.

This area is considered 'Important' as an ecological site for this constraints study and is worthy of NHA status.

4.4 Unshin River bank at Lackagh (Unshin River pCSAC) (G702221)

This site runs from the herb-rich bank of the Unshin River up hill to a typical pasture field. The entire field has been included in the Unshin River pCSAC and so the part of the field within the constraints study area was surveyed in some detail at the end of July 2000. This is bounded by the high voltage electricity supply line which runs parallel to the river and only the upper part (up hill of the electricity line) of the pasture was examined. It was concluded that there are no species here that are uncommon or rare and that the vegetation is typical of many of the less intensively managed fields of the region. A spring arises in the north-eastern corner of the site that feeds through an overgrown ditch directly into the Unshin River. This marshy area holds some ecological interest and should be protected if possible.

This area is considered 'Less Important' as an ecological site for this constraints study. It is reasonable to suggest that the pCSAC could have its boundaries redrawn to exclude the part of the field within the constraints study area for the N4 road.

4.5 Boathole Lough & Lough Corran, Drumfin (G6920)

Most of this site is outside of the constraints study area. The part of the site that bulges into the potential area for route selection is a lake and so it is unlikely that this will be filled for road building. If the lake is avoided then the bog to the south of the lake will also be safe from development and no ecological damage will ensue. A full floral survey was not carried out as the most interesting part of the site was outside of the constraints study area. A diverse bird fauna was noted which included whinchat (*Saxicola rubetra*), sedge warbler (*Acrocephalus schoenobaenus*), whitethroat (*Sylvia communis*)

and redpoll (*Acanthis flammea*). It is anticipated that these lakes will be good sites for overwintering wildfowl.

The land falling within the constraints study area is considered as 'Less Important' as an ecological site but the lakes, the bog and reed beds outside of the constraints study area should be examined by Duchas for consideration as an NHA.

4.6 Kingsbrook and Kilmorgan (G7117)

A meandering stream with several feeder channels passes through this area. Some parts of the stream are flanked by marshes and there is generally a good riparian zone. There are also patches of herb-rich limestone grassland. It is not possible to simply draw a line around this area and define a particular habitat type as the interest is very general. The location would not qualify as a Natural Heritage Area, but it is worthwhile flagging the area as of a higher than average biodiversity with some interesting species such as a good population of early purple orchid (*Orchis mascula*), mossy saxifrage (*Saxifraga hypnoides*) and shining crane's-bill (*Geranium lucidum*) on rock outcrops and birds such as grey wagtail (*Motacilla cinerea*) and sedge warbler near the river banks. It was observed that water in streams and ditches was crystal clear but filamentous algae were common and the stream beds are very silted. If the new road is routed through this area then a degree of sensitivity to the wildlife value of the location could be achieved with a small amount of specific ecological advice.

This area is considered 'Less Important' as an ecological site for the purpose of this constraints study.

4.7 Cuilleencroobagh Lough (G727176)

This site is not shown on the 1:50,000 map but does appear on the old 25 inch sheet. The lake has now almost become overgrown with marsh vegetation which has formed a quaking bog or scraw which is very dangerous to traverse. The area is also crossed by several wide and deep herb-rich ditches that are an attempt to drain the marshy fields. No full species list was prepared for this small site but it was considered as being of ecological value and is almost an extension of the "Ardloy Loughs and Aghalenane Lough" site that is described in the next section. This site falls in the 'shadow' of nearby Aghalenane Lough and so will not be affected if the larger lough is avoided during road planning.

This area is considered 'Important' as an ecological site and should be examined by Duchas for consideration as an NHA in conjunction with the next site.

4.8 Ardloy Loughs and Aghalenane Lough (G7317)

This site is a chain of two tiny lakes each of less than 0.5 ha. followed downstream by Aghalenane Lough which is slightly larger at about 1.5 ha. All three lakes are surrounded by reeds (*Phragmites australis*) with some bulrush (*Schoenoplectus lacustris*) and a selection of willow bushes (*Salix* spp.). Meadows adjacent to the lakes are marshy and have a diverse flora with sedges (*Carex* spp.) often as dominant members of the community. In most places the flora indicates that the meadows are neutral to slightly acidic, but there are some fenny places that are more lime-rich, and below (to the north of) Aghalenane Lough there is a bog with heather (*Calluna vulgaris*) and other acid-loving plants. There is thus a good diversity of habitats and species within this site and it includes several species that are uncommon in County Sligo including greater spearwort (*Ranunculus lingua*), great fen sedge (*Cladium mariscus*), lesser tussock sedge (*Carex diandra*) and both species of butterfly orchid (*Platanthera chlorantha* and *P. bifolia*).

This area is considered 'Important' as an ecological site and should be examined by Duchas for consideration as an NHA in conjunction with the previous site called Cuilleencroobagh Lough.

During the site visit it was noted that the water of the two Ardloy Loughs was organically polluted because it was of a black colour, had a very bad smell, and was clearly anaerobic. It was also noted that weedkiller had been applied along the shore of the lough next to the main N4 road and that a large pile of grass cuttings were left rotting right at the water's edge.

4.9 Swallow Hole near Riverstown (G739174)

This small pond and reed bed has been studied by Sligo Branch of BirdWatch Ireland for several winters because it occasionally holds whooper swans (*Cygnus cygnus*) and a variety of other waterfowl. Habitat used by the whooper swan is specifically protected by the EU Bird's Directive. A botanical survey in July 2000 found a good diversity of marsh and reed bed flora including marsh yellow-cress (*Rorippa palustris*), lesser marshwort (*Aptium inundatum*), cowbane (*Cicuta virosa*), large amounts of blue water-speedwell (*Veronica anagalis-aquatica*) and nodding bur-marigold (*Bidens cernua*). All of these plants are uncommon in County Sligo and are more commonly encountered further south in the Shannon catchment of south County Leitrim. Five species of dragonfly were also noted on the same date and it is believed that more would be recorded if the lake were visited at other seasons.

It is felt that this small site is ecologically valuable for its diversity across different plant and animal groups, so if possible should be protected. It may be worthy of NHA status and is to be regarded as a 'Very Important' site for the purpose of this constraints study.

4.10 Loughmeenaghan (G743162)

Loughmeenaghan is the largest lake within the constraints study area and is surrounded by habitats including reed beds, fen, marshes and alder-willow carr. Substantial amounts of charophytes (stoneworts) grow in the waters and this lake may qualify as a "Hard oligo-mesotrophic water with benthic vegetation of *Chara* formations" which is a habitat listed for conservation under the EU Habitats Directive (Natura 2000 code 3140). If this is the case then it has to be designated as a Special Area of Conservation (SAC). In addition to this there is a pondweed that may be *Potamogeton x fluitans* which would be a first Irish record for this hybrid, and around the lake edge there are several beds of great fen sedge (*Cladium mariscus*).

Most of the current field work concentrated on the strip of fen and grassland that lies between the current N4 and the lake shore. Several uncommon plants were found here including five species of orchid i.e. frog orchid (*Coeloglossum viride*), early marsh orchid (*Dactylorhiza incarnata*), fragrant orchid (*Gymnadaenia conopsea*), twayblade (*Listera ovata*) and common spotted orchid (*Dactylorhiza fuchsii*). This is a special piece of habitat, and as it runs right next to the current N4 road it means that if this fen habitat is to survive then it would preclude the N4 being widened at this point.

The lake was visited on several occasions from late May to late July resulting in nine species of dragonfly being observed which is more than one-third of all Irish species and included the uncommon hairy dragonfly (*Brachytron pratense*). Whooper swan (*Cygnus cygnus*) has been seen here in the winter and sedge warbler (*Acrocephalus schoenobaenus*) and reed bunting (*Emberiza schoeniclus*) are amongst the breeding species.

This area is considered 'Very Important' as an ecological site and should be a high priority for consideration as an NHA by Duchas. It is surprising that this is not already an NHA but in the report by Goodwillie *et al.* (1992) which was the basis for NHA's in this area, little attention was paid to Loughmeenaghan by the botanists even though the ornithologist made observations from this location. The site would deserve further study and the alder-willow carr habitat on the opposite side of the lake should then be looked at in some detail.

4.11 Drumderry near Castlebaldwin (G749155)

A small boggy area at this location holds similar species to other sites already described (e.g. Lackagh Fen and Cuilleencroobagh Lough) but doesn't have the diversity of these other habitats or the physical size. Grasshopper warbler (*Locustella naevia*) which is an amber listed bird species, breeds here (Newton *et al.* in press). It is an ecological site but is only rated as being 'Less Important' for this constraints study.

4.12 Cleavry Bog, Lough and hedgerow (G7414)

Three distinctly different pieces of habitat are all found together at this location, namely a piece of bog, a lake with reed beds and fen, and a mature hedgerow. They are treated as one site for this report as they are more or less contiguous.

The small bog is not of great ecological interest but adds diversity to the site. It is divided into two parts separated by a shallow ditch. The northern end is acid grassland with peat cuttings. It has some very wet patches with *Sphagnum* mosses and herbs such as bog asphodel (*Nartectum ossifragum*) and round-leaved sundew (*Drosera rotundifolia*). There are also higher drier areas with gorse bushes (*Ulex europaeus*). There is almost no heather but there are bog plants such as heath rush (*Juncus squarrosus*) and hare's-tail cottongrass (*Eriophorum vaginatum*). The southern end of this bog is dominated by heather (*Calluna vulgaris*) which is quite deep in places. There is a good bit of *Sphagnum* and other mosses forming a spongy mat and some *Cladonia* lichens as well as deergrass (*Trichophorum cespitosum*), hare's-tail cottongrass (*E. vaginatum*) and cross-leaved heath (*Erica tetralix*). Around the edges more soft rush (*Juncus effusus*), brambles (*Rubus fruticosus* agg.) and gorse (*U. europaeus*).

The lake and associated reed bed and fen are very interesting with two rare insects breeding here viz. the Irish damselfly (*Coenagrion lunulatum*) and the marsh fritillary butterfly (*Euphydryas aurinia*) which would be red data book species if Ireland had a red data book for insects. The flora of the lake is also of interest with cowbane (*Cicuta virosa*), many-stalked spike rush (*Eleocharis multicaulis*) and lesser pond-sedge (*Carex acutiformis*), all rare in Sligo but quite common here. A good diversity of water birds has been recorded here over the years with 28 pochard (*Aythya ferina*) on one occasion.

A shady mature hedgerow with a diverse and abundant fern flora acts as a buffer zone to the lake. This hedge includes no rare species but does have several large trees and a selection of herbs that suggest the hedge is of a great age. On the negative side two introduced species; snowberry (*Symphoricarpos albus*) and garden hedge honeysuckle (*Lonicera nitida*); are invading this hedgerow.

This is a 'Very Important' ecological site that has not previously been officially recognised by Duchas. The marsh below the lough was recently damaged by agricultural activity (May 2000) with more than half of it being lost and at the same time a large area of limestone grassland was ploughed up. The area needs to be considered for NHA status as a matter of priority.

4.13 Cloghoge near Castlebaldwin (Bricklieve Mountains pCSAC) (G756136)

This area would not have been included in this discussion of ecological sites had it not been designated as a part of the Bricklieve Mountains pCSAC.

The part of the pCSAC that falls within the constraints study area are marshy pasture fields that flood in the winter time. The simple flora of this area is clearly adapted to flooding with silverweed (*Potentilla anserina*) and amphibious bistort (*Persicaria amphibia*) completely dominating the area. Two uncommon species for Sligo were also observed, namely marsh yellow-cress (*Rorippa palustris*) and common water-crowfoot (*Ranunculus aquatilis*). This area could be classified as a turlough which is a habitat type listed in the EU Habitats Directive (Turloughs (Ireland) Natura 2000 code 3180). A local resident informed me that few waterfowl come to the area in the winter and there is no shooting of duck there.

The land immediately to the south-west of the turlough is steep with an interesting area of hazel scrub, limestone outcrops and limestone grassland. These are all habitats that make the Bricklieve Mountains a valuable Special Area of Conservation. It would seem impossible for this area to be considered suitable for road construction and it appears to lie just outside of the constraints study area.

This area is considered 'Important' as an ecological site because it is a turlough, but having said that, there is a low botanical diversity and no special invertebrates or birds were noted on my visit in July 2000. If the area is needed for road construction then Duchas should be requested to re-assess the location with a view to re-drawing the pCSAC boundaries.

4.14 Summary of findings

Twelve ecological sites have been identified within the constraints study area. Three of the sites are a part of 'proposed Candidate Special Areas of Conservation' but all three of these locations are on the fringes of their pCSAC's and a strong case could be made to Duchas to redraw the boundaries of two and possibly all three of the sites to allow road construction to proceed if the need were to arise.

Of the nine new sites described in this report, three are considered to be 'Very Important' ecological sites that should be avoided when planning the new route. Duchas should consider these locations for designation as new Natural Heritage Areas. A further four sites are considered as 'Important' and these might also be worthy of NHA status (one is already a part of a pCSAC). The remaining five sites are classified as 'Less Important' and included here are two of the pCSAC areas that really have no habitats or species of interest. The other three are identified as having ecological value and should be avoided if at all possible, but the main constraint might be to request that the road design goes some way to lessen the impact if the site can not be avoided.

5.0 REFERENCES

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Appendices

**Ecological data relevant to sites visited during this study
for the area between Cloonamahon and Castlebaldwin.**

Sites are presented in the following sequence :-

- Lisconny Bridge near Collooney (Unshin River pCSAC) (G695229)
- Lackagh Fen near Drumfin (G6922)
- Unshin River bank at Lackagh (Unshin River pCSAC) (G702221)
- Boathole Lough & Lough Corran, Drumfin (G6920)
- Kingsbrook and Kilmorgan (G7117)
- Cuilleencroobagh Lough (G727176)
- Ardloy Loughs and Aghalenane Lough (G7317)
- Swallow Hole near Riverstown (G739174)
- Loughmeenaghan (G743162)
- Drumderry near Castlebaldwin (G749155)
- Cleavry Bog, Lough and hedgerow (G7414)
- Cloghoge near Castlebaldwin (Bricklieve Mountains pCSAC) (G756136)

Lisconny Bridge near Collooney

Sligo

G 695229

SCIENTIFIC NAME	COMMON NAME	No.	NOTES	OBSERVER(S)	DATE
<i>Phyllitis scolopendrium</i>	Hart's-tongue fern		Uncommon.	Don Cotton	17/07/2000
<i>Asplenium trichomanes</i>	Maidenhair spleenwort		Frequent on wall.	Don Cotton	17/07/2000
<i>Asplenium ruta-muraria</i>	Wall-rue		Frequent on wall.	Don Cotton	17/07/2000
<i>Ceterach officinarum</i>	Rustyback		Frequent on wall.	Don Cotton	17/07/2000
<i>Dryopteris affinis</i>	Sosly male-fern		Occasional.	Don Cotton	17/07/2000
<i>Ranunculus acris</i>	Meadow buttercup		Frequent.	Don Cotton	17/07/2000
<i>Ranunculus repens</i>	Creeping buttercup		Frequent.	Don Cotton	17/07/2000
<i>Urtica dioica</i>	Common nettle		Occasional.	Don Cotton	17/07/2000
<i>Stellaria graminea</i>	Lesser stitchwort		Occasional.	Don Cotton	17/07/2000
<i>Cerastium fontanum</i>	Common mouse-ear		Frequent.	Don Cotton	17/07/2000
<i>Sagina procumbens</i>	Prostrate pearlwort		Uncommon.	Don Cotton	17/07/2000
<i>Rumex acetosa</i>	Common sorrel		Occasional.	Don Cotton	17/07/2000
<i>Rumex crispus</i>	Curled dock		Occasional.	Don Cotton	17/07/2000
<i>Rumex conglomeratus</i>	Clustered dock		Frequent.	Don Cotton	17/07/2000
<i>Filipendula ulmaria</i>	Meadowweet		Common.	Don Cotton	17/07/2000
<i>Rubus fruticosus</i> agg.	Common bramble		Common.	Don Cotton	17/07/2000
<i>Potentilla anserina</i>	Silverweed		Frequent.	Don Cotton	17/07/2000
<i>Geum rivale</i>	Water avens		Occasional.	Don Cotton	17/07/2000
<i>Crataegus monogyna</i>	Hawthorn		Common.	Don Cotton	17/07/2000
<i>Vicia sepium</i>	Bush vetch		Frequent.	Don Cotton	17/07/2000
<i>Lathyrus pratensis</i>	Meadow vetchling		Frequent.	Don Cotton	17/07/2000
<i>Tritolium repens</i>	White clover		Frequent.	Don Cotton	17/07/2000
<i>Tritolium pratense</i>	Red clover		Occasional.	Don Cotton	17/07/2000
<i>Epiobium montanum</i>	Broad-leaved willowherb		Occasional.	Don Cotton	17/07/2000
<i>Epiobium obscurum</i>	Shor-fruited willowherb		Uncommon.	Don Cotton	17/07/2000
<i>Acer pseudoplatanus</i>	Sycamore		Uncommon.	Don Cotton	17/07/2000
<i>Geranium robertianum</i>	Herb-Robert		Occasional.	Don Cotton	17/07/2000
<i>Anthriscus sylvestris</i>	Cow parsley		Frequent.	Don Cotton	17/07/2000
<i>Heracleum sphondylium</i>	Common hogweed		Occasional.	Don Cotton	17/07/2000
<i>Tordilis japonica</i>	Upright hedge-parsley		Occasional.	Don Cotton	17/07/2000
<i>Prunella vulgaris</i>	Selfheal		Occasional.	Don Cotton	17/07/2000
<i>Plantago lanceolata</i>	Ribwort plantain		Frequent.	Don Cotton	17/07/2000
<i>Fraxinus excelsior</i>	Ash		Uncommon.	Don Cotton	17/07/2000
<i>Veronica chamaedrys</i>	Germander speedwell		Uncommon.	Don Cotton	17/07/2000
<i>Euphrasia</i> spp.	eyebright sp.		Frequent.	Don Cotton	17/07/2000
<i>Oenanthe verna</i>	Red bartula		Occasional.	Don Cotton	17/07/2000
<i>Gallium verum</i>	Lady's bedstraw		Frequent.	Don Cotton	17/07/2000
<i>Gallium aparine</i>	Cleavers		Occasional.	Don Cotton	17/07/2000
<i>Cirsium palustre</i>	Marsh thistle		Frequent.	Don Cotton	17/07/2000
<i>Cirsium arvense</i>	Creeping thistle		Common.	Don Cotton	17/07/2000
<i>Centaurea nigra</i>	Common knapweed		Frequent.	Don Cotton	17/07/2000
<i>Lapsana communis</i>	Nipplewort		Frequent.	Don Cotton	17/07/2000
<i>Sonchus asper</i>	Prickly sow-thistle		Occasional.	Don Cotton	17/07/2000
<i>Crepis capillaris</i>	Smooth hawk's-beard		Frequent.	Don Cotton	17/07/2000
<i>Bellis perennis</i>	Daisy		Occasional.	Don Cotton	17/07/2000
<i>Leucanthemum vulgare</i>	Oxeye daisy		Occasional.	Don Cotton	17/07/2000
<i>Senecio jacobaea</i>	Common ragwort		Frequent.	Don Cotton	17/07/2000
<i>Senecio aquaticus</i>	Marsh ragwort		Frequent.	Don Cotton	17/07/2000
<i>Juncus articulatus</i>	Jointed rush		Frequent.	Don Cotton	17/07/2000
<i>Juncus acutiflorus</i>	Sharp-flowered rush		Occasional.	Don Cotton	17/07/2000
<i>Juncus inflexus</i>	Hard rush		Occasional.	Don Cotton	17/07/2000
<i>Juncus effusus</i>	Soft rush		Common.	Don Cotton	17/07/2000
<i>Carex ovalis</i>	Oval sedge		Frequent.	Don Cotton	17/07/2000
<i>Carex flacca</i>	Glaucous sedge		Frequent.	Don Cotton	17/07/2000
<i>Lolium perenne</i>	Perennial rye-grass		Common.	Don Cotton	17/07/2000
<i>Cynosurus cristatus</i>	Crested dog's-tail		Frequent.	Don Cotton	17/07/2000
<i>Arrhenatherum elatius</i>	False oat-grass		Common.	Don Cotton	17/07/2000
<i>Holcus lanatus</i>	Yorkshire-fog		Common.	Don Cotton	17/07/2000
<i>Anthoxanthum odoratum</i>	Sweet vernal-grass		Common.	Don Cotton	17/07/2000
<i>Agrostis capillaris</i>	Common bent		Common.	Don Cotton	17/07/2000
<i>Alopecurus geniculatus</i>	Marsh foxtail		Frequent.	Don Cotton	17/07/2000
<i>Phleum pratense</i>	Timothy		Frequent.	Don Cotton	17/07/2000
<i>Iris pseudacorus</i>	Yellow iris		Common.	Don Cotton	17/07/2000
<i>Dactylorhiza fuchsii</i>	Common spotted orchid		Occasional.	Don Cotton	17/07/2000
<i>Suaeda pumila</i>				Don Cotton	17/07/2000
<i>Helix aspersa</i>		1		Don Cotton	17/07/2000
<i>Calopteryx splendens</i>		1		Don Cotton	17/07/2000
<i>Orthocentrus wilsonii</i>	Common green	25		Don Cotton	17/07/2000
<i>Pieris napi</i>	Green-veined white	1		Don Cotton	17/07/2000

Lisconny Bridge near Collooney
Sligo
G 695 229

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>No.</u>	<u>NOTES</u>	<u>OBSERVER(S)</u>	<u>DATE</u>
<i>Maniola jurtina</i>	Meadow brown	2		Don Cotton	17/07/2000
<i>Aphantopus hyperantus</i>	Ringlet	05		Don Cotton	17/07/2000
<i>Tyria jacobaeae</i>	Chinabar moth		Caterpillars.	Don Cotton	17/07/2000
<i>Phasianus colchicus</i>	Pheasant	1	Heard.	Don Cotton	17/07/2000
<i>Anthus pratensis</i>	Meadow pipit	1	Heard.	Don Cotton	17/07/2000
<i>Saxicola torquata</i>	Stonechat		Family.	Don Cotton	17/07/2000
<i>Carduelis carduelis</i>	Goldfinch		Heard.	Don Cotton	17/07/2000
<i>Sorex minutus</i>	Pygmy shrew		Heard.	Don Cotton	17/07/2000

Lackagh fen near Drumfin

Sligo

G 699218

SCIENTIFIC NAME	COMMON NAME	No.	NOTES	OBSERVER(S)	DATE
<i>Equisetum fluviatile</i>	Water horsetail		Frequent.	Don Cotton	20/06/2000
<i>Equisetum palustre</i>	Marsh horsetail		Frequent.	Don Cotton	20/06/2000
<i>Dryopteris dilatata</i>	Broad buckler-fern		Uncommon.	Don Cotton	20/06/2000
<i>Caltha palustris</i>	Marsh marigold		Frequent.	Don Cotton	20/06/2000
<i>Ranunculus acris</i>	Meadow buttercup		Frequent.	Don Cotton	20/06/2000
<i>Ranunculus flammula</i>	Lesser spearwort		Frequent.	Don Cotton	20/06/2000
<i>Stellaria uliginosa (=alsine)</i>	Bog stitchwort		Occasional.	Don Cotton	20/06/2000
<i>Stellaria graminea</i>	Lesser stitchwort		Occasional.	Don Cotton	20/06/2000
<i>Cerastium fontanum</i>	Common mouse-ear		Occasional.	Don Cotton	20/06/2000
<i>Lycchnis flo-cuculi</i>	Ragged-robin		Common.	Don Cotton	20/06/2000
<i>Rumex acetosa</i>	Common sorrel		Frequent.	Don Cotton	20/06/2000
<i>Salix purpurea</i>	Purple willow		Occasional along margin of bog with main road.	Don Cotton	20/06/2000
<i>Salix viminalis</i>	Osier		Occasional along margin of bog with main road.	Don Cotton	20/06/2000
<i>Salix cinerea oleifolia</i>	Rusty willow		Occasional.	Don Cotton	20/06/2000
<i>Salix aurita</i>	Eared willow		Uncommon.	Don Cotton	20/06/2000
<i>Rorippa microphylla</i>	Narrow-fruited		Locally common.	Don Cotton	20/06/2000
<i>Cardamine pratensis</i>	Lady's-smock		Frequent.	Don Cotton	20/06/2000
<i>Calluna vulgaris</i>	Ling (plant)		Local and uncommon.	Don Cotton	20/06/2000
<i>Pilpendula ulmaris</i>	Meadowswail		Common.	Don Cotton	20/06/2000
<i>Potentilla palustris</i>	Marsh cinquefoil		Occasional.	Don Cotton	20/06/2000
<i>Potentilla anserina</i>	Sliverweed		Frequent.	Don Cotton	20/06/2000
<i>Potentilla erecta</i>	Tormentil		Frequent.	Don Cotton	20/06/2000
<i>Geum rivale</i>	Water avens		Uncommon.	Don Cotton	20/06/2000
<i>Crataegus monogyna</i>	Hawthorn		Uncommon.	Don Cotton	20/06/2000
<i>Vicia cracca</i>	Tufted vetch		Frequent.	Don Cotton	20/06/2000
<i>Vicia sepium</i>	Bush vetch		Uncommon.	Don Cotton	20/06/2000
<i>Lathyrus pratensis</i>	Meadow vetchling		Frequent.	Don Cotton	20/06/2000
<i>Trifolium repens</i>	White clover		Frequent.	Don Cotton	20/06/2000
<i>Trifolium pratense</i>	Red clover		Frequent.	Don Cotton	20/06/2000
<i>Hydrocotyle vulgaris</i>	Marsh pennywort		Common.	Don Cotton	20/06/2000
<i>Angelica sylvestris</i>	Wild angelica		Common.	Don Cotton	20/06/2000
<i>Myosotis laxa</i>	Tufted forget-me-not		Occasional.	Don Cotton	20/06/2000
<i>Ajuga reptans</i>	Bugle		Uncommon.	Don Cotton	20/06/2000
<i>Mentha aquatica</i>	Water mint		Frequent.	Don Cotton	20/06/2000
<i>Hippurus vulgaris</i>	Mare's-tail		Occasional.	Don Cotton	20/06/2000
<i>Piantago lanceolata</i>	Ribwort plantain		Frequent.	Don Cotton	20/06/2000
<i>Fragaria vesicaria</i>	Ash		Locally along road verges.	Don Cotton	20/06/2000
<i>Veronica chamaedrys</i>	Germander speedwell		Uncommon.	Don Cotton	20/06/2000
<i>Veronica scutellata</i>	Marsh speedwell		Uncommon.	Don Cotton	20/06/2000
<i>Veronica beccabunga</i>	Brooklime		Occasional.	Don Cotton	20/06/2000
<i>Rhinanthus minor</i>	Yellow-rattle		Occasional.	Don Cotton	20/06/2000
<i>Pedicularis palustris</i>	Marsh lousewort		Occasional.	Don Cotton	20/06/2000
<i>Galium palustre</i>	Common marsh-bedstraw		Frequent.	Don Cotton	20/06/2000
<i>Sambucus nigra</i>	Elder		Occasional along margin of bog with main road.	Don Cotton	20/06/2000
<i>Valeriana officinalis</i>	Common valerian		Occasional.	Don Cotton	20/06/2000
<i>Cirsium dissectum</i>	Meadow thistle		Locally frequent.	Don Cotton	20/06/2000
<i>Cirsium palustre</i>	Marsh thistle		Frequent.	Don Cotton	20/06/2000
<i>Hypochaeris radicata</i>	Café-ear		Uncommon.	Don Cotton	20/06/2000
<i>Triglochin palustris</i>	Marsh arrowgrass		Frequent.	Don Cotton	20/06/2000
<i>Lemna minor</i>	Common duckweed		in main drainage ditch.	Don Cotton	20/06/2000
<i>Lemna trisulca</i>	lvy-leaved duckweed		in main drainage ditch.	Don Cotton	20/06/2000
<i>Juncus inflexus</i>	Hard rush		Uncommon.	Don Cotton	20/06/2000
<i>Juncus effusus</i>	Soft rush		Frequent.	Don Cotton	20/06/2000
<i>Juncus conglomeratus</i>	Compact rush		Common.	Don Cotton	20/06/2000
<i>Luzula multiflora</i>	Heath wood-rush		Occasional. Subspecies <i>congesta</i> also found.	Don Cotton	20/06/2000
<i>Eriophorum angustifolium</i>	Common cottongrass		Occasional.	Don Cotton	20/06/2000
<i>Eleocharis palustris</i>	Common spike-rush		Locally abundant.	Don Cotton	20/06/2000
<i>Schoenoplectus lacustris</i>	Common club-rush		One small patch noted right in middle of bog	Don Cotton	20/06/2000
<i>Carex panicea</i>	Greater tussock-sedge		Uncommon along main drainage ditch.	Don Cotton	20/06/2000
<i>Carex diandra</i>	Lesser tussock-sedge		Locally abundant.	Don Cotton	20/06/2000
<i>Carex disticha</i>	Brown sedge		Frequent.	Don Cotton	20/06/2000
<i>Carex echinata</i>	Star sedge		Frequent.	Don Cotton	20/06/2000
<i>Carex rostrata</i>	Bottle sedge		Common.	Don Cotton	20/06/2000
<i>Carex flacca</i>	Glaucous sedge		Frequent.	Don Cotton	20/06/2000
<i>Carex panicea</i>	Common sedge		Frequent.	Don Cotton	20/06/2000
<i>Carex viridula brachyrhyncha</i>	Long-stalked		Occasional.	Don Cotton	20/06/2000
<i>Carex nigra</i>	Common sedge		Common.	Don Cotton	20/06/2000
<i>Carex pulicaris</i>	Fitz sedge		Occasional.	Don Cotton	20/06/2000
<i>Festuca ovina</i>	Sheep's-riscus		Frequent.	Don Cotton	20/06/2000

Lackagh fen near Drumfin

Sligo

G 699218

SCIENTIFIC NAME	COMMON NAME	No.	NOTES	OBSERVER(S)	DATE
<i>Cynosurus cristatus</i>	Crested dog's-tail		Uncommon.	Don Cotton	20/06/2000
<i>Dactylis glomerata</i>	Cock's-foot grass		Occasional.	Don Cotton	20/06/2000
<i>Glyceris sulcata</i>	Flooding sweet-grass		Locally along main drainage ditch.	Don Cotton	26/06/2000
<i>Helictotrichon pubescens</i>	Downy oat-grass		Locally common.	Don Cotton	20/06/2000
<i>Holcus lanatus</i>	Yorkshire-fog		Common.	Don Cotton	20/06/2000
<i>Anthoxanthum odoratum</i>	Sweet vernal-grass		Abundant.	Don Cotton	20/06/2000
<i>Typha latifolia</i>	Reed-mace		Locally frequent.	Don Cotton	20/06/2000
<i>Iris pseudacorus</i>	Yellow Iris		Locally frequent.	Don Cotton	20/06/2000
<i>Pteranthera trilobis</i>	Lesser butterfly-orchid	1	Near middle of bog.	Don Cotton	26/06/2000
<i>Dactylocteniza fuchsii</i>	Common spotted orchid		Occasional.	Don Cotton	20/06/2000
<i>Dactylocteniza incarnata</i>	Incarnata	c20	Occasional.	Don Cotton	20/06/2000
<i>Pityas fontinalis</i>			Frequent.	Don Cotton	26/06/2000
<i>Pythosoma nymphala</i>				Don Cotton	26/06/2000
<i>Ischnura elegans</i>		c20		Don Cotton	26/06/2000
<i>Cataglyphis tenuata</i>	Small china-mark		Many.	Don Cotton	26/06/2000
<i>Maniola jurtina</i>	Meadow brown	1	First of 2000.	Don Cotton	20/06/2000
<i>Maniola jurtina</i>	Meadow brown			Don Cotton	26/06/2000
<i>Coenonympha pamphilus</i>	Small heath	c10		Don Cotton	20/06/2000
<i>Coenonympha pamphilus</i>	Small heath	1		Don Cotton	26/06/2000
<i>Phalodoria potatoris</i>	The drier	1	Adult.	Don Cotton	26/06/2000
<i>Tyria jacotiana</i>	Chnabar moth	1		Don Cotton	26/06/2000
<i>Autographa gamma</i>	Silver Y	2		Don Cotton	20/06/2000
<i>Autographa gamma</i>	Silver Y	1		Don Cotton	26/06/2000
<i>Rhyngia campestris</i>		c5		Don Cotton	20/06/2000
<i>Bombus pascuorum</i>				Don Cotton	26/06/2000
<i>Rana temporaria</i>	Common frog	c10		Don Cotton	20/06/2000
<i>Rana temporaria</i>	Common frog		Abundant.	Don Cotton	26/06/2000
<i>Gallinago gallinago</i>	Snip	1		Don Cotton	26/06/2000
<i>Hirundo rustica</i>	Swallow	2	Flying over area.	Don Cotton	20/06/2000
<i>Anthus pratensis</i>	Meadow pipit	2	At least two displaying.	Don Cotton	20/06/2000
<i>Anthus pratensis</i>	Meadow pipit	c3		Don Cotton	26/06/2000
<i>Erithacus rubecula</i>	Robin	1		Don Cotton	26/06/2000
<i>Saxicola torquata</i>	Stonechat	3	Juveniles.	Don Cotton	20/06/2000
<i>Saxicola torquata</i>	Stonechat	2	Male and female.	Don Cotton	26/06/2000
<i>Acrocephalus schoenobaenus</i>	Sedge warbler	1	Singing in hedgerow.	Don Cotton	20/06/2000
<i>Carduelis chloris</i>	Greenfinch	1	Singing in hedgerow.	Don Cotton	20/06/2000
<i>Carduelis cannabina</i>	Linnet	1		Don Cotton	26/06/2000
<i>Acanthis flammea</i>	Redpoll	1	Flying over area calling.	Don Cotton	20/06/2000
<i>Acanthis flammea</i>	Redpoll	1	Flying overhead.	Don Cotton	26/06/2000
<i>Emberiza schoeniclus</i>	Reed tunting	2	At least two males singing.	Don Cotton	20/06/2000
<i>Emberiza schoeniclus</i>	Reed tunting	2		Don Cotton	26/06/2000

Unshin River bank at Lackagh

Sligo
G 702221

SCIENTIFIC NAME	COMMON NAME	No.	NOTES	OBSERVER(S)	DATE
<i>Equisetum fluviatile</i>	Water horsetail		Occasional.	Don Cotton & Monica	31/07/2000
<i>Equisetum palustre</i>	Marsh horsetail		Frequent.	Don Cotton & Monica	31/07/2000
<i>Cattha palustris</i>	Marsh marigold		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Ranunculus acris</i>	Meadow buttercup		Occasional.	Don Cotton & Monica	31/07/2000
<i>Ranunculus flammula</i>	Lesser spearwort		Occasional.	Don Cotton & Monica	31/07/2000
<i>Urtica dioica</i>	Common nettle		Occasional.	Don Cotton & Monica	31/07/2000
<i>Stellaria graminea</i>	Lesser stitchwort		Occasional.	Don Cotton & Monica	31/07/2000
<i>Cerastium fontanum</i>	Common mouse-ear		Occasional.	Don Cotton & Monica	31/07/2000
<i>Rumex acetosa</i>	Common sorrel		Occasional.	Don Cotton & Monica	31/07/2000
<i>Rumex crispus</i>	Curled dock		Occasional.	Don Cotton & Monica	31/07/2000
<i>Rumex obtusifolius</i>	Broad-leaved dock		Occasional.	Don Cotton & Monica	31/07/2000
<i>Salix alba</i> var. <i>alba</i>	White willow		One tree.	Don Cotton & Monica	31/07/2000
<i>Salix purpurea</i>	Purple willow		Occasional.	Don Cotton & Monica	31/07/2000
<i>Salix aurita</i>	Eared willow		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Rorippa nasturtium-aquaticum</i>	Common water-cress		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Cardamine pratensis</i>	Lady's-smock		Occasional.	Don Cotton & Monica	31/07/2000
<i>Primula vulgaris</i>	Primrose		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Samolus valerandi</i>	Brookweed		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Filipendula ulmaria</i>	Meadowsweet		Frequent.	Don Cotton & Monica	31/07/2000
<i>Rubus fruticosus</i> agg.	Common bramble		Occasional.	Don Cotton & Monica	31/07/2000
<i>Potentilla palustris</i>	Marsh cinquefoil		Occasional.	Don Cotton & Monica	31/07/2000
<i>Potentilla erecta</i>	Tornetill		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Crataegus monogyna</i>	Hawthorn		Occasional.	Don Cotton & Monica	31/07/2000
<i>Lotus corniculatus</i>	Bird's-foot trefoil		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Vicia cracca</i>	Tufted vetch		Occasional.	Don Cotton & Monica	31/07/2000
<i>Vicia sepium</i>	Bush vetch		Occasional.	Don Cotton & Monica	31/07/2000
<i>Lathyrus pratensis</i>	Meadow vetchling		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Trifolium repens</i>	White clover		Frequent.	Don Cotton & Monica	31/07/2000
<i>Trifolium pratense</i>	Red clover		Occasional.	Don Cotton & Monica	31/07/2000
<i>Epilobium palustre</i>	Marsh willowherb		Frequent.	Don Cotton & Monica	31/07/2000
<i>Linum catharticum</i>	Fairy flax		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Geranium robertianum</i>	Herb-Robert		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Hedera helix</i>	Ivy		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Apium nodiflorum</i>	Foot's water-cress		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Angelica sylvestris</i>	Wild angelica		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Myosotis laxa</i>	Tufted forget-me-not		Rare.	Don Cotton & Monica	31/07/2000
<i>Prunella vulgaris</i>	Selfheal		Occasional.	Don Cotton & Monica	31/07/2000
<i>Plantago lanceolata</i>	Ribwort plantain		Occasional.	Don Cotton & Monica	31/07/2000
<i>Ligustrum vulgare</i>	Wild privet		Occasional.	Don Cotton & Monica	31/07/2000
<i>Scrophularia nodosa</i>	Common figwort		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Veronica chamaedrys</i>	Germander speedwell		Occasional.	Don Cotton & Monica	31/07/2000
<i>Veronica beccabunga</i>	Brooklime		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Galium palustre</i>	Common marsh-bedstraw		Frequent.	Don Cotton & Monica	31/07/2000
<i>Valeriana officinalis</i>	Common valerian		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Cirsium palustre</i>	Marsh thistle		Occasional.	Don Cotton & Monica	31/07/2000
<i>Cirsium arvense</i>	Creeching thistle		Occasional.	Don Cotton & Monica	31/07/2000
<i>Centaurea nigra</i>	Common knapweed		Occasional.	Don Cotton & Monica	31/07/2000
<i>Hypochaeris radicata</i>	Cat's-ear		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Crepis paludosa</i>	Marsh hawk's-beard		Occasional.	Don Cotton & Monica	31/07/2000
<i>Bellis perennis</i>	Daisy		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Lamina minor</i>	Common dudweed		Occasional.	Don Cotton & Monica	31/07/2000
<i>Juncus articulatus</i>	Jointed rush		Frequent.	Don Cotton & Monica	31/07/2000
<i>Juncus acutiflorus</i>	Sharp-flowered rush		Common.	Don Cotton & Monica	31/07/2000
<i>Juncus inflexus</i>	Hard rush		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Juncus effusus</i>	Soft rush		Common.	Don Cotton & Monica	31/07/2000
<i>Juncus conglomeratus</i>	Compact rush		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Carex dielschii</i>	Brown sedge		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Carex echinata</i>	Star sedge		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Carex flacca</i>	Glaucous sedge		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Carex viciaea</i> (detected)	Common yellow-sedge		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Carex nigra</i>	Common sedge		Occasional.	Don Cotton & Monica	31/07/2000
<i>Carex pumila</i>	Pess sedge		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Lolium perenne</i>	Perennial rye-grass		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Cynosurus cristatus</i>	Crested dog's-tail		Occasional.	Don Cotton & Monica	31/07/2000
<i>Dactylis glomerata</i>	Cock's-foot grass		Occasional.	Don Cotton & Monica	31/07/2000
<i>Coeleria macrantha</i>	Crested hawk-grass		Rare.	Don Cotton & Monica	31/07/2000
<i>Holcus lanatus</i>	Yorkshire-fog		Common.	Don Cotton & Monica	31/07/2000
<i>Anthoxanthum odoratum</i>	Sweet vernal-grass		Common.	Don Cotton & Monica	31/07/2000
<i>Phleum pratense</i>	Timothy		Frequent.	Don Cotton & Monica	31/07/2000

Unshin River bank at Lackagh
Sligo
G 702221

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>No.</u>	<u>NOTES</u>	<u>OBSERVER(S)</u>	<u>DATE</u>
<i>Iris pseudacorus</i>	Yellow Iris		Occasional.	Don Cotton & Monica	31/07/2000
<i>Dactylorhiza fuchsii</i>	Common spotted orchid		Occasional.	Don Cotton & Monica	31/07/2000
<i>Pleis napf</i>	Green-veined white	c10		Don Cotton & Monica	31/07/2000
<i>Merula julina</i>	Meadow brown	2		Don Cotton & Monica	31/07/2000
<i>Achantopus hyperantus</i>	Ringlet	c5		Don Cotton & Monica	31/07/2000

nr Boathole Lough and Lough Corran, Drumfin
Sligo
G 698206

SCIENTIFIC NAME	COMMON NAME	No.	NOTES	OBSERVER(S)	DATE
<i>Galtha palustris</i>	Marsh marigold			Don Cotton & Martin Cotton	06/05/2000
<i>Drosera rotundifolia</i>	Round-leaved sundew		Occasional.	Don Cotton & Magin Cotton	13/05/2000
<i>Cardamine pratensis</i>	Lady's-smock			Don Cotton & Martin Cotton	06/05/2000
<i>Geum rivale</i>	Water avens		First of 2000 in flower. Two clumps where stream enters lake.	Don Cotton & Martin Cotton	06/05/2000
<i>Maryanthes trifoliata</i>	Bogbean			Don Cotton & Martin Cotton	06/05/2000
<i>Lemna minor</i>	Common duckweed		Common.	Don Cotton & Martin Cotton	06/05/2000
<i>Carex panicea</i>	Greater tussock-sedge		First of 2000 in flower. Two clumps near where stream enters lake.	Don Cotton & Martin Cotton	06/05/2000
<i>Carex rostrata</i>	Bottle sedge		Common.	Don Cotton & Martin Cotton	06/05/2000
<i>Phragmites australis</i>	Common reed		Common.	Don Cotton & Martin Cotton	06/05/2000
<i>Typha latifolia</i>	Reed-mace		Occasional.	Don Cotton & Martin Cotton	06/05/2000
<i>Lymnaea stagnalis</i>		c10	Common.	Don Cotton & Martin Cotton	06/05/2000
<i>Pyrthosoma nymphula</i>		c20		Don Cotton & Martin Cotton	06/05/2000
<i>Enallagma cyathigerum</i>		c10		Don Cotton	29/07/1981
<i>Ischnura elegans</i>		3		Don Cotton	29/07/1981
<i>Pieris napi</i>	Green-veined white	c20		Don Cotton & Martin Cotton	06/05/2000
<i>Anthocharis cardamines</i>	Orange-tip	c8		Don Cotton & Martin Cotton	06/05/2000
<i>Anthocharis cardamines</i>	Orange-tip	04		Don Cotton & Martin Cotton	06/05/2000
<i>Aglais urticae</i>	Small tortoiseshell	2		Don Cotton & Martin Cotton	06/05/2000
<i>Aglais urticae</i>	Small tortoiseshell	3		Don Cotton & Martin Cotton	06/05/2000
<i>Inachis io</i>	Peacock	3		Don Cotton & Martin Cotton	06/05/2000
<i>Inachis io</i>	Peacock	5		Don Cotton & Martin Cotton	06/05/2000
<i>Saturnia pavonia</i>	Emperor moth	c30	Mainly flying over bog.	Don Cotton & Martin Cotton	06/05/2000
<i>Bombus pratorum</i>		1	Queen.	Don Cotton & Martin Cotton	06/05/2000
<i>Bombus hortorum</i>		1	Queen. 3 yellow bands with white rear.	Don Cotton & Martin Cotton	06/05/2000
<i>Perca fluviatilis</i>	Perch		Small shoal.	Don Cotton	29/07/1981
<i>Rana temporaria</i>	Common frog	1		Don Cotton & Martin Cotton	06/05/2000
<i>Podiceps cristatus</i>	Great crested grebe	1	Total widgeon count.	Don Cotton & Martin Cotton	06/05/2000
<i>Phalacrocorax carbo</i>	Cormorant	1	Total widgeon count.	Don Cotton & Martin Cotton	06/05/2000
<i>Cygnus olor</i>	Mute swan	1	Total widgeon count. Male. Swam to Lough Corran.	Don Cotton & Martin Cotton	06/05/2000
<i>Cygnus olor</i>	Mute swan	1	Total widgeon count. Male. Swam from Boathole Lough.	Don Cotton & Martin Cotton	06/05/2000
<i>Anas platyrhynchos</i>	Mallard		Female with ducklings.	Don Cotton & Martin Cotton	06/05/2000
<i>Anas platyrhynchos</i>	Mallard	8	Total widgeon count. 7 males and 1 female. Males flew to Lough Corran.	Don Cotton & Martin Cotton	06/05/2000
<i>Anas platyrhynchos</i>	Mallard	7	Total widgeon count. 7 males. Flew from Boathole Lough.	Don Cotton & Martin Cotton	06/05/2000
<i>Phasianus colchicus</i>	Pheasant	1		Don Cotton & Martin Cotton	06/05/2000
<i>Gallinula chloropus</i>	Moorhen	1	Total widgeon count. Heard.	Don Cotton & Martin Cotton	06/05/2000
<i>Fulca atra</i>	Coot	1	Total widgeon count.	Don Cotton & Martin Cotton	06/05/2000
<i>Gallinago gallinago</i>	Snipe	1	Flushed from bog.	Don Cotton & Martin Cotton	06/05/2000
<i>Cuculus canorus</i>	Cuckoo	1	Calling.	Don Cotton & Martin Cotton	06/05/2000
<i>Alauda arvensis</i>	Skylark	2	Singing.	Don Cotton & Martin Cotton	06/05/2000
<i>Riparis riparia</i>	Sand martin	c15	Nesting in overhang of stream bank.	Don Cotton & Martin Cotton	06/05/2000
<i>Riparis riparia</i>	Sand martin	6	Feeding over water.	Don Cotton & Martin Cotton	06/05/2000
<i>Hirundo rustica</i>	Swallow	2		Don Cotton & Martin Cotton	06/05/2000
<i>Anthus pratensis</i>	Meadow pipit	c10		Don Cotton & Martin Cotton	06/05/2000
<i>Troglodytes troglodytes</i>	Wren	1	Singing.	Don Cotton & Martin Cotton	06/05/2000
<i>Troglodytes troglodytes</i>	Wren	1		Don Cotton & Martin Cotton	06/05/2000
<i>Saxicola rubra</i>	Whinchat	2	First of 2000. Male and female.	Martin Enright	06/05/2000
<i>Saxicola torquata</i>	Stonechat	1	Male.	Don Cotton & Martin Cotton	06/05/2000
<i>Saxicola torquata</i>	Stonechat	2	Male and female.	Don Cotton & Martin Cotton	13/05/2000
<i>Turdus philomelos</i>	Song thrush	2		Don Cotton & Martin Cotton	06/05/2000
<i>Acrocephalus schoenobaenus</i>	Sedge warbler	4	Singing. Another two at other side of bog in G72.	Don Cotton & Martin Cotton	06/05/2000
<i>Sylvia communis</i>	Whitethroat	1	Singing.	Don Cotton & Martin Cotton	06/05/2000
<i>Phylloscopus trochilus</i>	Willow warbler	4	Singing.	Don Cotton & Martin Cotton	06/05/2000
<i>Carduelis cannabina</i>	Linnet	4		Don Cotton & Martin Cotton	06/05/2000
<i>Acanthis flammea</i>	Redpoll	4		Don Cotton & Martin Cotton	06/05/2000
<i>Emberiza schoeniclus</i>	Reed bunting	4		Don Cotton & Martin Cotton	06/05/2000

Kingsbrook and Kilmorgan near Riverstown

Sligo

G 718176

SCIENTIFIC NAME	COMMON NAME	No.	NOTES	OBSERVER(S)	DATE
<i>Asplenium ruta-muraria</i>	Wall-rue			Don Cotton & Martin Cotton	13/05/2000
<i>Nuphar lutea</i>	Yellow water-lily			Don Cotton & Martin Cotton	13/05/2000
<i>Caltha palustris</i>	Marsh marigold		Common.	Don Cotton & Elaine Cotton	10/05/2000
<i>Caltha palustris</i>	Marsh marigold			Don Cotton & Martin Cotton	13/05/2000
<i>Ranunculus ficaria</i>	Lesser celandine			Don Cotton & Martin Cotton	13/05/2000
<i>Urtica dioica</i>	Common nettle			Don Cotton & Martin Cotton	13/05/2000
<i>Stellaria alpinosa (vulgaris)</i>	Bog stitchwort			Don Cotton & Martin Cotton	13/05/2000
<i>Viola riviniana</i>	Common dog-violet			Don Cotton & Martin Cotton	13/05/2000
<i>Populus tremula</i>	Aspen			Don Cotton & Martin Cotton	13/05/2000
<i>Alliaria petiolata</i>	Garlic mustard		Small patch along road verge.	Don Cotton & Elaine Cotton	10/05/2000
<i>Arabis thaliana</i>	Thale cress		First of 2000 in flower. Along base of stone wall.	Don Cotton & Elaine Cotton	10/05/2000
<i>Cardamine pratensis</i>	Lady's-smock			Don Cotton & Elaine Cotton	10/05/2000
<i>Cardamine pratensis</i>	Lady's-smock		Frequent.	Don Cotton & Martin Cotton	13/05/2000
<i>Primula vulgaris</i>	Primrose			Don Cotton & Martin Cotton	13/05/2000
<i>Saxifraga hypnoides</i>	Mossy saxifrage		First of 2000 in flower. On rock.	Don Cotton & Martin Cotton	13/05/2000
<i>Saxifraga hypnoides</i>	Mossy saxifrage			Don Cotton & Martin Cotton	13/05/2000
<i>Filipendula ulmaria</i>	Meadowweet			Don Cotton & Martin Cotton	13/05/2000
<i>Potentilla palustris</i>	Marsh cinquefoil			Don Cotton & Martin Cotton	13/05/2000
<i>Potentilla anserina</i>	Silverweed			Don Cotton & Martin Cotton	13/05/2000
<i>Potentilla erecta</i>	Tormentil			Don Cotton & Martin Cotton	13/05/2000
<i>Gaum rivale</i>	Water swain			Don Cotton & Martin Cotton	13/05/2000
<i>Crataegus monogyna</i>	Hawthorn			Don Cotton & Martin Cotton	13/05/2000
<i>Lotus corniculatus</i>	Bed's-foot trefoil			Don Cotton & Martin Cotton	13/05/2000
<i>Vicia sepium</i>	Bush vetch			Don Cotton & Martin Cotton	13/05/2000
<i>Trifolium campestre</i>	Hop trefoil			Don Cotton & Martin Cotton	13/05/2000
<i>Ulex europaeus</i>	Gorse			Don Cotton & Martin Cotton	13/05/2000
<i>Geranium lucidum</i>	Shining crane's-bill			Don Cotton & Elaine Cotton	10/05/2000
<i>Conopodium majus</i>	Pignut			Don Cotton & Martin Cotton	13/05/2000
<i>Oenanthe fluviatilis</i>	River water-dropwort			Don Cotton & Martin Cotton	13/05/2000
<i>Apium nodiflorum</i>	Foot's water-cress			Don Cotton & Martin Cotton	13/05/2000
<i>Symphytum x uplandicum</i>	hybrid comfrey		First of 2000 in flower. At cross-roads.	Don Cotton & Elaine Cotton	10/05/2000
<i>Ajuga reptans</i>	Bugle		Stream bank.	Don Cotton & Elaine Cotton	10/05/2000
<i>Ajuga reptans</i>	Bugle			Don Cotton & Martin Cotton	13/05/2000
<i>Mentha spicata</i>	Spear mint		1998. NCR. Described as "Unstin River streams at Kilmorgan"	Roger Goodwillie, Carrone	
<i>Plantago lanceolata</i>	Ribwort plantain			Don Cotton & Martin Cotton	13/05/2000
<i>Veronica chamaedrys</i>	Germander speedwell			Don Cotton & Martin Cotton	13/05/2000
<i>Pedicularis sylvatica</i>	Common lousewort			Don Cotton & Martin Cotton	13/05/2000
<i>Belvis perennis</i>	Daisy			Don Cotton & Martin Cotton	13/05/2000
<i>Achillea millefolium</i>	Yarrow			Don Cotton & Martin Cotton	13/05/2000
<i>Petasites hybridus</i>	Butterbur			Don Cotton & Martin Cotton	13/05/2000
<i>Potamogeton crispus</i>	Curled pondweed			Don Cotton & Martin Cotton	13/05/2000
<i>Juncus effusus</i>	Soft rush			Don Cotton & Martin Cotton	13/05/2000
<i>Luzula multiflora</i>	Heath wood-rush			Don Cotton & Martin Cotton	13/05/2000
<i>Eriophorum angustifolium</i>	Common cottongrass			Don Cotton & Martin Cotton	13/05/2000
<i>Carex panicea</i>	Greater tussock-sedge			Don Cotton & Martin Cotton	13/05/2000
<i>Carex flacca</i>	Glossy sedge			Don Cotton & Martin Cotton	13/05/2000
<i>Carex panicea</i>	Common sedge			Don Cotton & Martin Cotton	13/05/2000
<i>Anthoxanthum odoratum</i>	Sweet vernal-grass			Don Cotton & Martin Cotton	13/05/2000
<i>Iris pseudacorus</i>	Yellow iris		Stream bank.	Don Cotton & Elaine Cotton	10/05/2000
<i>Iris pseudacorus</i>	Yellow iris			Don Cotton & Martin Cotton	13/05/2000
<i>Orchis mascula</i>	Early-purple orchid		Many plants along bank beside marsh and stream.	Don Cotton & Elaine Cotton	10/05/2000
<i>Bithynia tentaculata</i>				Don Cotton & Martin Cotton	13/05/2000
<i>Pyrthosoma nymphula</i>		2		Don Cotton & Elaine Cotton	10/05/2000
<i>Pieris napi</i>	Green-veined white	c50		Don Cotton & Elaine Cotton	10/05/2000
<i>Pieris napi</i>	Green-veined white	c10		Don Cotton & Martin Cotton	13/05/2000
<i>Anthocharis cardamines</i>	Orange-tip	c10		Don Cotton & Elaine Cotton	10/05/2000
<i>Anthocharis cardamines</i>	Orange-tip			Don Cotton & Martin Cotton	13/05/2000
<i>Aglais urticae</i>	Small tortoiseshell	1		Don Cotton & Elaine Cotton	10/05/2000
<i>Inachis io</i>	Peacock	1		Don Cotton & Elaine Cotton	10/05/2000
<i>Inachis io</i>	Peacock	2		Don Cotton & Martin Cotton	13/05/2000
<i>Pararge aegeria</i>	Speckled wood	2		Don Cotton & Elaine Cotton	10/05/2000
<i>Pararge aegeria</i>	Speckled wood	3		Don Cotton & Martin Cotton	13/05/2000
<i>Rhyngia campestris</i>				Don Cotton & Martin Cotton	13/05/2000
<i>Bombus pascuorum</i>				Don Cotton & Elaine Cotton	10/05/2000
<i>Coccineella 7-punctata</i>	7-sppt ladybird	1		Don Cotton & Martin Cotton	13/05/2000
<i>Salmo trutta</i>	Brown trout			Don Cotton & Martin Cotton	13/05/2000
<i>Gasterosteus aculeatus</i>	Three-spined stickleback			Don Cotton & Martin Cotton	13/05/2000
<i>Rana temporaria</i>	Common frog	1		Don Cotton & Martin Cotton	13/05/2000
<i>Phasianus colchicus</i>	Pheasant	1	Heard.	Don Cotton & Elaine Cotton	10/05/2000

Kingsbrook and Kilmorgan near Riverstown

Sligo

G 72 16

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>No.</u>	<u>NOTES</u>	<u>OBSERVER(S)</u>	<u>DATE</u>
<i>Hirundo rustica</i>	Swallow	2		Don Cotton & Elaine Cotton	10/05/2000
<i>Anthus pratensis</i>	Meadow pipit	2		Don Cotton & Elaine Cotton	10/05/2000
<i>Motacilla cinerea</i>	Grey wagtail	1	Male.	Don Cotton & Elaine Cotton	10/05/2000
<i>Acrocephalus schoenobaenus</i>	Sedge warbler	2		Don Cotton & Elaine Cotton	10/05/2000
<i>Acrocephalus schoenobaenus</i>	Sedge warbler	1	Singing.	Don Cotton & Martin Cotton	13/05/2000
<i>Phylloscopus trochilus</i>	Willow warbler	04		Don Cotton & Elaine Cotton	10/05/2000
<i>Phylloscopus trochilus</i>	Willow warbler	1	Singing.	Don Cotton & Martin Cotton	13/05/2000
<i>Regulus regulus</i>	Goldcrest	1	Singing.	Don Cotton & Martin Cotton	13/05/2000
<i>Parus ater</i>	Coal tit	2	Nesting in hole in wall of bridge.	Don Cotton & Martin Cotton	13/05/2000
<i>Carduelis carduelis</i>	Goldfinch	1		Don Cotton & Elaine Cotton	10/05/2000
<i>Carduelis carduelis</i>	Goldfinch	3		Don Cotton & Martin Cotton	13/05/2000
<i>Emberiza schoeniclus</i>	Reed bunting	2		Don Cotton & Elaine Cotton	10/05/2000

Cullieencroobagh Lough near Riverstown

Sligo

G 727176

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>No.</u>	<u>NOTES</u>	<u>OBSERVER(S)</u>	<u>DATE</u>
<i>Equisetum fluviatile</i>	Water horsetail		Dominant.	Don Cotton & Monica	31/07/2000
<i>Lychnis viscaria</i>	Ragged-robin		Occasional.	Don Cottop & Monica	31/07/2000
<i>Salix cinerea olafolia</i>	Rusty willow		Frequent.	Don Cotton & Monica	31/07/2000
<i>Potentilla palustris</i>	Marsh cinquefoil		Frequent.	Don Cotton & Monica	31/07/2000
<i>Epiobium palustre</i>	Marsh willowherb		Frequent.	Don Cotton & Monica	31/07/2000
<i>Angelica sylvestris</i>	Wild angelica		Frequent.	Don Cotton & Monica	31/07/2000
<i>Menyanthes trifoliata</i>	Bogbean		Common.	Don Cotton & Monica	31/07/2000
<i>Mentha aquatica</i>	Water mint		Occasional.	Don Cotton & Monica	31/07/2000
<i>Galium palustre</i>	Common marsh-bedstraw		Frequent.	Don Cotton & Monica	31/07/2000
<i>Valeriana officinalis</i>	Common valerian		Occasional.	Don Cotton & Monica	31/07/2000
<i>Carex paniculata</i>	Greater tussock-sedge		Occasional.	Don Cotton & Monica	31/07/2000
<i>Carex disticha</i>	Brown sedge		Occasional.	Don Cotton & Monica	31/07/2000
<i>Carex rostrata</i>	Botia sedge		Frequent.	Don Cotton & Monica	31/07/2000
<i>Carex viridula brachyrrhyncha</i>	Long-tralked		Uncommon.	Don Cotton & Monica	31/07/2000
<i>Phragmites australis</i>	Common reed		Abundant.	Don Cotton & Monica	31/07/2000
<i>Artesia platyrrhynchos</i>	Mellard	3		Don Cotton & Monica	31/07/2000

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SCIENTIFIC NAME	COMMON NAME	No.	NOTES	OBSERVER(S)	DATE
<i>Equisetum fluviale</i>	Water horsetail		Frequent.	Don Cotton & Monica	10/07/2000
<i>Equisetum arvense</i>	Field horsetail		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Equisetum palustre</i>	Marsh horsetail		Occasional.	Don Cotton & Monica	10/07/2000
<i>Nymphaea alba</i>	White water-lily		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Najas flexilis</i>	Yellow water-lily		Occasional.	Don Cotton & Monica	10/07/2000
<i>Caitha palustris</i>	Marsh marigold		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Ranunculus acris</i>	Meadow buttercup		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Ranunculus repens</i>	Creeping buttercup		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Ranunculus lingua</i>	Greater spearwort		Occasional.	Don Cotton & Monica	10/07/2000
<i>Ranunculus flammula</i>	Lesser spearwort		Frequent.	Don Cotton & Monica	10/07/2000
<i>Urtica dioica</i>	Common nettle		Occasional.	Don Cotton & Monica	10/07/2000
<i>Stellaria uliginosa</i> (valina)	Bog stitchwort		Occasional.	Don Cotton & Monica	10/07/2000
<i>Stellaria graminea</i>	Lesser stitchwort		Occasional.	Don Cotton & Monica	10/07/2000
<i>Cerastium fontanum</i>	Common mouse-ear		Occasional.	Don Cotton & Monica	10/07/2000
<i>Sagina nodosa</i>	Knotted pearlwort		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Lycotris flex-cuculi</i>	Ragged-robin		Occasional.	Don Cotton & Monica	10/07/2000
<i>Rumex acetosella</i>	Sheep's sorrel		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Rumex acetosa</i>	Common sorrel		Occasional.	Don Cotton & Monica	10/07/2000
<i>Hypericum tetrapetrum</i>	Square-stalked		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Hypericum pulchrum</i>	Slender St. John's-wort		Occasional.	Don Cotton & Monica	10/07/2000
<i>Populus tremula</i>	Aspen		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Salix viminalis</i>	Osier		Occasional.	Don Cotton & Monica	10/07/2000
<i>Salix caprea</i> x <i>viminalis</i>		2	Uncommon.	Don Cotton & Monica	10/07/2000
<i>Salix cinerea dioica</i>	Rusty willow		Occasional.	Don Cotton & Monica	10/07/2000
<i>Salix auria</i>	Eared willow		Frequent.	Don Cotton & Monica	10/07/2000
<i>Salix repens</i>	Creeping willow		Frequent.	Don Cotton & Monica	10/07/2000
<i>Cardamine pratensis</i>	Lady's-smock		Occasional.	Don Cotton & Monica	10/07/2000
<i>Calluna vulgaris</i>	Ling (plant)		Locally common.	Don Cotton & Monica	10/07/2000
<i>Erica tetralix</i>	Cross-leaved heath		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Filipendula ulmaria</i>	Meadowsweet		Frequent.	Don Cotton & Monica	10/07/2000
<i>Rubus fruticosus</i> agg.	Common bramble		Frequent.	Don Cotton & Monica	10/07/2000
<i>Potentilla palustris</i>	Marsh cinquefoil		Occasional.	Don Cotton & Monica	10/07/2000
<i>Potentilla anserina</i>	Stiverweed		Locally frequent.	Don Cotton & Monica	10/07/2000
<i>Potentilla erecta</i>	Tormentil		Frequent.	Don Cotton & Monica	10/07/2000
<i>Crataegus monogyna</i>	Hawthorn		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Vicia cracca</i>	Tufted vetch		Frequent.	Don Cotton & Monica	10/07/2000
<i>Vicia sepium</i>	Bush vetch		Occasional.	Don Cotton & Monica	10/07/2000
<i>Lathyrus pratensis</i>	Meadow vetchling		Frequent.	Don Cotton & Monica	10/07/2000
<i>Trifolium repens</i>	White clover		Occasional.	Don Cotton & Monica	10/07/2000
<i>Trifolium pratense</i>	Red clover		Frequent.	Don Cotton & Monica	10/07/2000
<i>Ulex europaeus</i>	Gorse		Occasional.	Don Cotton & Monica	10/07/2000
<i>Epilobium hirsutum</i>	Great willowherb		Occasional.	Don Cotton & Monica	10/07/2000
<i>Epilobium parviflorum</i>	Hairy willowherb		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Polygala serpyllifolia</i>	Heath milkwort		Occasional.	Don Cotton & Monica	10/07/2000
<i>Hydrocotyle vulgaris</i>	Marsh pennywort		Occasional.	Don Cotton & Monica	10/07/2000
<i>Apium nodiflorum</i>	Foot's water-cress		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Angelica sylvestris</i>	Wild angelica		Occasional.	Don Cotton & Monica	10/07/2000
<i>Mertensia triflora</i>	Bogbean		Frequent.	Don Cotton & Monica	10/07/2000
<i>Myosotis laxa</i>	Tufted forget-me-not		Occasional.	Don Cotton & Monica	10/07/2000
<i>Prunella vulgaris</i>	Selfheal		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Mentha aquatica</i>	Water mint		Occasional.	Don Cotton & Monica	10/07/2000
<i>Hippuris vulgaris</i>	Man's-tail		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Plantago lanceolata</i>	Ribwort plantain		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Fraxinus excelsior</i>	Ash		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Veronica scutellata</i>	Marsh speedwell		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Veronica anagallis-aquatica</i>	Blue water-speedwell		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Rhinanthus minor</i>	Yellow-rattle		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Pedicularis palustris</i>	Marshousewort		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Pedicularis sylvatica</i>	Common housewort		Occasional.	Don Cotton & Monica	10/07/2000
<i>Gallium palustre</i>	Common marsh-bedstraw		Frequent.	Don Cotton & Monica	10/07/2000
<i>Gallium saxatile</i>	Heath bedstraw		Frequent.	Don Cotton & Monica	10/07/2000
<i>Gallium aparine</i>	Cleavers		Frequent.	Don Cotton & Monica	10/07/2000
<i>Valeriana officinalis</i>	Common valerian		Frequent.	Don Cotton & Monica	10/07/2000
<i>Succisa pratensis</i>	Devil's-bit scabious		Common.	Don Cotton & Monica	10/07/2000
<i>Cirsium palustre</i>	Marsh thistle		Occasional.	Don Cotton & Monica	10/07/2000
<i>Cirsium arvense</i>	Creeping thistle		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Centaurea nigra</i>	Common knapweed		Common.	Don Cotton & Monica	10/07/2000
<i>Salix baccata</i>	Daisy		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Senecio aquaticus</i>	Marsh ragwort		Occasional.	Don Cotton & Monica	10/07/2000

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SCIENTIFIC NAME	COMMON NAME	No.	NOTES	OBSERVER(S)	DATE
<i>Triglochin palustris</i>	Marsh arrowgrass		Occasional.	Don Cotton & Monica	10/07/2000
<i>Juncus squarrosus</i>	Heath rush		Frequent.	Don Cotton & Monica	10/07/2000
<i>Juncus effusus</i>	Soft rush		Common.	Don Cotton & Monica	10/07/2000
<i>Juncus conglomeratus</i>	Compact rush		Common.	Don Cotton & Monica	10/07/2000
<i>Luzula multiflora congesta</i>	Congested heath		Frequent.	Don Cotton & Monica	10/07/2000
<i>Eriophorum angustifolium</i>	Common cottongrass		Occasional.	Don Cotton & Monica	10/07/2000
<i>Schoenoplectus lacustris</i>	Common club-rush		Common.	Don Cotton & Monica	10/07/2000
<i>Cladium mariscus</i>	Great fen-sedge		Occasional.	Don Cotton & Monica	10/07/2000
<i>Carex paniculata</i>	Greater tussock-sedge		Occasional.	Don Cotton & Monica	10/07/2000
<i>Carex diandra</i>	Lesser tussock-sedge		Common.	Don Cotton & Monica	10/07/2000
<i>Carex disticha</i>	Brown sedge		Occasional.	Don Cotton & Monica	10/07/2000
<i>Carex ovalis</i>	Oval sedge		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Carex echinata</i>	Star sedge		Occasional.	Don Cotton & Monica	10/07/2000
<i>Carex rostrata</i>	Bottle sedge		Common.	Don Cotton & Monica	10/07/2000
<i>Carex flacca</i>	Glaucous sedge		Frequent.	Don Cotton & Monica	10/07/2000
<i>Carex panicea</i>	Carnation sedge		Frequent.	Don Cotton & Monica	10/07/2000
<i>Carex viridula brachyrhyncha</i>	Long-stalked		Occasional.	Don Cotton & Monica	10/07/2000
<i>Carex nigra</i>	Common sedge		Frequent.	Don Cotton & Monica	10/07/2000
<i>Carex pulicaris</i>	Flea sedge		Occasional.	Don Cotton & Monica	10/07/2000
<i>Cynosurus cristatus</i>	Crested dog's-tail		Occasional.	Don Cotton & Monica	10/07/2000
<i>Dactylis glomerata</i>	Cock's-foot grass		Occasional.	Don Cotton & Monica	10/07/2000
<i>Glyceria notata</i>	Plicate sweet-grass		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Deschampsia cespitosa</i>	Tufted hair-grass		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Holcus lanatus</i>	Yorkshire-fog		Frequent.	Don Cotton & Monica	10/07/2000
<i>Anthoxanthum odoratum</i>	Sweet vernal-grass		Frequent.	Don Cotton & Monica	10/07/2000
<i>Alopecurus pratensis</i>	Meadow foxtail		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Phleum pratense</i>	Timothy		Uncommon.	Don Cotton & Monica	10/07/2000
<i>Molinia caerulea</i>	Purple moor-grass		Occasional.	Don Cotton & Monica	10/07/2000
<i>Phragmites australis</i>	Common reed		Frequent.	Don Cotton & Monica	10/07/2000
<i>Typha latifolia</i>	Reed-mace		Occasional.	Don Cotton & Monica	10/07/2000
<i>Narthecium ossifragum</i>	Bog asphodel		Occasional.	Don Cotton & Monica	10/07/2000
<i>Platanthera chlorantha</i>	Greater butterfly-orchid	3	Uncommon.	Don Cotton & Monica	10/07/2000
<i>Platanthera bifida</i>	Lesser butterfly-orchid	08	Occasional.	Don Cotton & Monica	10/07/2000
<i>Dactylorhiza fuchsii</i>	Common spotted orchid		Frequent.	Don Cotton & Monica	10/07/2000
<i>Dactylorhiza maculata</i>	Heath spotted orchid		Locally common.	Don Cotton & Monica	10/07/2000
<i>Pyrrosoma nymphula</i>		c10		Don Cotton	20/06/1981
<i>Coenagrion pulchellum</i>		c10		Don Cotton	20/06/1981
<i>Coenagrion pulchellum</i>		c20		Don Cotton & Monica	10/07/2000
<i>Enallagma cyathigerum</i>		1		Don Cotton	20/06/1981
<i>Enallagma cyathigerum</i>				Don Cotton	31/07/1981
<i>Ischnura elegans</i>		c30		Don Cotton	20/06/1981
<i>Ischnura elegans</i>				Don Cotton	31/07/1981
<i>Ischnura elegans</i>		c10		Don Cotton & Monica	10/07/2000
<i>Aeschna grandis</i>		1		Don Cotton & Monica	10/07/2000
<i>Sympetrum striatum / nigrescens</i>		c10		Don Cotton	31/07/1981
<i>Onocostus viridulus</i>	Common green			Don Cotton	31/07/1981
<i>Onocostus viridulus</i>	Common green	c5		Don Cotton & Monica	10/07/2000
<i>Pieris napi</i>	Green-veined white	c3		Don Cotton & Monica	10/07/2000
<i>Maniola jurtina</i>	Meadow brown	c15		Don Cotton & Monica	10/07/2000
<i>Aphantopus hyperantus</i>	Ringlet	c40		Don Cotton & Monica	10/07/2000
<i>Haematoxota pluvialis</i>	Common cleg	c5		Don Cotton & Monica	10/07/2000
<i>Chrysotoxum bicinctum</i>		1		Don Cotton & Monica	10/07/2000
<i>Anas platyrhynchos</i>	Mallard	2		Don Cotton & Monica	10/07/2000
<i>Accipiter nisus</i>	Sparrowhawk	1		Don Cotton	20/06/1981
<i>Accipiter nisus</i>	Sparrowhawk		Breeding.	Don Cotton	31/07/1981
<i>Gallinula chloropus</i>	Moorhen		Nest photographed.	Don Cotton	20/06/1981
<i>Gallinula chloropus</i>	Moorhen		With family.	Don Cotton & Monica	10/07/2000
<i>Riparia riparia</i>	Sand martin	1		Don Cotton & Monica	10/07/2000
<i>Troglodytes troglodytes</i>	Wren	1	Heard.	Don Cotton & Monica	10/07/2000
<i>Saxicola torquata</i>	Stonechat	4	Family.	Don Cotton & Monica	10/07/2000
<i>Acrocephalus schoenobaenus</i>	Sedge warbler			Don Cotton	20/06/1981
<i>Acrocephalus schoenobaenus</i>	Sedge warbler	1	Singing.	Don Cotton & Monica	10/07/2000
<i>Phylloscopus trochilus</i>	Willow warbler	1		Don Cotton & Monica	10/07/2000
<i>Carduelis cannabina</i>	Linnel	2		Don Cotton & Monica	10/07/2000
<i>Emberiza schoeniclus</i>	Reed bunting		Singing.	Don Cotton & Monica	10/07/2000

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SCIENTIFIC NAME	COMMON NAME	No.	NOTES	OBSERVER(S)	DATE
<i>Equisetum fluviatile</i>	Water horsetail			Don Cotton & Martin Cotton	25/07/2000
<i>Ranunculus acris</i>	Meadow buttercup			Don Cotton & Martin Cotton	25/07/2000
<i>Ranunculus flammula</i>	Lesser spearwort			Don Cotton & Martin Cotton	25/07/2000
<i>Urtica dioica</i>	Common nettle			Don Cotton & Martin Cotton	25/07/2000
<i>Alnus glutinosa</i>	Alder			Don Cotton & Martin Cotton	25/07/2000
<i>Statista graminea</i>	Lesser stichwort			Don Cotton & Martin Cotton	25/07/2000
<i>Cerastium fontanum</i>	Common mouse-ear			Don Cotton & Martin Cotton	25/07/2000
<i>Rumex acetosa</i>	Common sorrel			Don Cotton & Martin Cotton	25/07/2000
<i>Rumex crispus</i>	Curled dock			Don Cotton & Martin Cotton	25/07/2000
<i>Persicaria amphibia</i>	Amphibious bistort			Don Cotton & Martin Cotton	25/07/2000
<i>Rorippa nasturtium-aquaticum</i>	Common water-cress			Don Cotton & Martin Cotton	25/07/2000
<i>Rorippa palustris</i>	Marsh yellow-cress			Don Cotton & Martin Cotton	25/07/2000
<i>Cardamine pratensis</i>	Lady's-smock			Don Cotton & Martin Cotton	25/07/2000
<i>Capsella bursa-pastoris</i>	Shepherd's-purse			Don Cotton & Martin Cotton	25/07/2000
<i>Filipendula ulmaria</i>	Meadowweet			Don Cotton & Martin Cotton	25/07/2000
<i>Potentilla anserina</i>	Silverweed			Don Cotton & Martin Cotton	25/07/2000
<i>Prunus spinosa</i>	Blackthorn			Don Cotton & Martin Cotton	25/07/2000
<i>Crasgeus monogyna</i>	Hawthorn			Don Cotton & Martin Cotton	25/07/2000
<i>Trifolium repens</i>	White clover			Don Cotton & Martin Cotton	25/07/2000
<i>Trifolium pratense</i>	Red clover			Don Cotton & Martin Cotton	25/07/2000
<i>Lythrum salicaria</i>	Purple loosestrife			Don Cotton & Martin Cotton	25/07/2000
<i>Epilobium hirsutum</i>	Great willowherb			Don Cotton & Martin Cotton	25/07/2000
<i>Epilobium parviflorum</i>	Hairy willowherb			Don Cotton & Martin Cotton	25/07/2000
<i>Geranium robertianum</i>	Herb-Robert			Don Cotton & Martin Cotton	25/07/2000
<i>Apium nodiflorum</i>	Food's water-cress			Don Cotton & Martin Cotton	25/07/2000
<i>Apium inundatum</i>	Lesser marshwort			Don Cotton & Martin Cotton	25/07/2000
<i>Cicuta virosa</i>	Cowbane			Don Cotton & Martin Cotton	25/07/2000
<i>Torilis japonica</i>	Upright hedge-parsley			Don Cotton & Martin Cotton	25/07/2000
<i>Myosotis scorpioides</i>	Water forget-me-not			Don Cotton & Martin Cotton	25/07/2000
<i>Prunella vulgaris</i>	Salthai			Don Cotton & Martin Cotton	25/07/2000
<i>Mentha aquatica</i>	Water mint			Don Cotton & Martin Cotton	25/07/2000
<i>Hippurus vulgaris</i>	Mare's-tail			Don Cotton & Martin Cotton	25/07/2000
<i>Callitriche agg.</i>	water-starwort			Don Cotton & Martin Cotton	25/07/2000
<i>Plantago major</i>	Greater plantain			Don Cotton & Martin Cotton	25/07/2000
<i>Plantago lanceolata</i>	Ribwort plantain			Don Cotton & Martin Cotton	25/07/2000
<i>Fraxinus excelsior</i>	Ash			Don Cotton & Martin Cotton	25/07/2000
<i>Veronica anagallis-aquatica</i>	Blue water-speedwell			Don Cotton & Martin Cotton	25/07/2000
<i>Galium palustre</i>	Common marsh-bedstraw			Don Cotton & Martin Cotton	25/07/2000
<i>Galium verum</i>	Lady's bedstraw			Don Cotton & Martin Cotton	25/07/2000
<i>Valeriana officinalis</i>	Common valerian			Don Cotton & Martin Cotton	25/07/2000
<i>Cirsium palustre</i>	Marsh thistle			Don Cotton & Martin Cotton	25/07/2000
<i>Cirsium arvense</i>	Creeping thistle			Don Cotton & Martin Cotton	25/07/2000
<i>Bellis perennis</i>	Daisy			Don Cotton & Martin Cotton	25/07/2000
<i>Senecio jacobaea</i>	Common ragwort			Don Cotton & Martin Cotton	25/07/2000
<i>Senecio aquaticus</i>	Marsh ragwort			Don Cotton & Martin Cotton	25/07/2000
<i>Bidens cernua</i>	Nodding bur-marigold			Don Cotton & Martin Cotton	25/07/2000
<i>Alisma plantago-aquatica</i>	Common water-plantain			Don Cotton & Martin Cotton	25/07/2000
<i>Lemna minor</i>	Common duckweed			Don Cotton & Martin Cotton	25/07/2000
<i>Juncus articulatus</i>	Jointed rush			Don Cotton & Martin Cotton	25/07/2000
<i>Juncus inflexus</i>	Hard rush			Don Cotton & Martin Cotton	25/07/2000
<i>Juncus effusus</i>	Soft rush			Don Cotton & Martin Cotton	25/07/2000
<i>Eleocharis palustris</i>	Common spike-rush			Don Cotton & Martin Cotton	25/07/2000
<i>Schoenoplectus lacustris</i>	Common club-rush			Don Cotton & Martin Cotton	25/07/2000
<i>Carex rostrata</i>	Bottle sedge			Don Cotton & Martin Cotton	25/07/2000
<i>Lolium perenne</i>	Perennial ryegrass			Don Cotton & Martin Cotton	25/07/2000
<i>Cynosurus cristatus</i>	Crested dog's-tail			Don Cotton & Martin Cotton	25/07/2000
<i>Glyceria fluitans</i>	Floating sweet-grass			Don Cotton & Martin Cotton	25/07/2000
<i>Anthoxanthum odoratum</i>	Sweet vernal-grass			Don Cotton & Martin Cotton	25/07/2000
<i>Phalaris arundinacea</i>	Reed canary-grass			Don Cotton & Martin Cotton	25/07/2000
<i>Alopecurus geniculatus</i>	Marsh foxtail			Don Cotton & Martin Cotton	25/07/2000
<i>Phragmites australis</i>	Timothy			Don Cotton & Martin Cotton	25/07/2000
<i>Sparganium angustifolium</i>	Branched bur-reed			Don Cotton & Martin Cotton	25/07/2000
<i>Typha latifolia</i>	Reed-mace			Don Cotton & Martin Cotton	25/07/2000
<i>Iris pseudacorus</i>	Yellow iris			Don Cotton & Martin Cotton	25/07/2000
<i>Dactylorhiza fuchsii</i>	Common spotted orchid			Don Cotton & Martin Cotton	25/07/2000
<i>Lymnaea stagnalis</i>		1	Old shell.	Don Cotton & Martin Cotton	25/07/2000
<i>Caudofoveate splendens</i>		1	Male.	Don Cotton & Martin Cotton	25/07/2000
<i>Coenagrion punctatum</i>		25		Don Cotton & Martin Cotton	25/07/2000
<i>Ischnura elegans</i>		200		Don Cotton & Martin Cotton	25/07/2000

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SCIENTIFIC NAME	COMMON NAME	NO.	NOTES	OBSERVER(S)	DATE
<i>Aeschna grandis</i>		1		Don Cotton & Martin Cotton	25/07/2000
<i>Sympterygus stridatulum</i>		1		Don Cotton & Martin Cotton	25/07/2000
<i>Pieris napi</i>	Green-veined white	c50		Don Cotton & Martin Cotton	25/07/2000
<i>Aglais urticae</i>	Small tortoiseshell	c3		Don Cotton & Martin Cotton	25/07/2000
<i>Pieris eschra</i>	Speckled wood	2		Don Cotton & Martin Cotton	25/07/2000
<i>Maniola jurtina</i>	Meadow brown	c3		Don Cotton & Martin Cotton	25/07/2000
<i>Aphantopus hyperantus</i>	Ringlet	c5		Don Cotton & Martin Cotton	25/07/2000
<i>Tyria jacobaeae</i>	Cinnabar moth		Caterpillars.	Don Cotton & Martin Cotton	25/07/2000
<i>Haematodes pluvialis</i>	Common dog	1		Don Cotton & Martin Cotton	25/07/2000
<i>Pyrophaena granditarsa</i>		c10		Don Cotton & Martin Cotton	25/07/2000
<i>Cygnus olor</i>	Mute swan	2	Adults.	Don Cotton	18/12/1994
<i>Cygnus olor</i>	Mute swan	2	Adults.	Don Cotton	13/02/1995
<i>Cygnus olor</i>	Mute swan	2	Total wildfowl count. Adults.	Don Cotton	05/01/1996
<i>Cygnus olor</i>	Mute swan	2	Total wildfowl count. Adults.	Don Cotton & family	17/01/1998
<i>Cygnus olor</i>	Mute swan	5	Total wildfowl count. 2 adults and 3 juveniles.	Don Cotton, Noel Raftery &	01/01/1999
<i>Cygnus cygnus</i>	Whooper swan	28	Juveniles 3	Don Cotton, Noel Raftery &	03/01/1994
<i>Cygnus cygnus</i>	Whooper swan	4	Adults. No rings.	Don Cotton	18/12/1994
<i>Cygnus cygnus</i>	Whooper swan	4	Total wildfowl count. 2 adults and 2 juveniles.	Don Cotton & family	17/01/1998
<i>Cygnus cygnus</i>	Whooper swan	5	Total wildfowl count. 2 adults and 3 juveniles.	Don Cotton, Noel Raftery &	01/01/1999
<i>Anas penelope</i>	Wigeon	2	1 male and 1 female.	Don Cotton	18/12/1994
<i>Anas penelope</i>	Wigeon	11		Don Cotton & Noel Raftery	18/11/1995
<i>Anas penelope</i>	Wigeon	12	Total wildfowl count.	Don Cotton	10/12/1995
<i>Anas penelope</i>	Wigeon	2	Total wildfowl count.	Don Cotton & family	21/12/1996
<i>Anas penelope</i>	Wigeon	8	Total wildfowl count.	Don Cotton & Noel Raftery	13/02/2000
<i>Anas crecca</i>	Teal	11		Don Cotton & Niall Mogan	24/12/1994
<i>Anas crecca</i>	Teal	2		Don Cotton & Noel Raftery	18/11/1995
<i>Anas crecca</i>	Teal	21	Total wildfowl count.	Don Cotton	10/12/1995
<i>Anas crecca</i>	Teal	24	Total wildfowl count.	Don Cotton & Noel Raftery	18/12/1995
<i>Anas crecca</i>	Teal	2	Total wildfowl count.	Don Cotton	05/01/1996
<i>Anas crecca</i>	Teal	1	Total wildfowl count.	Don Cotton & Noel Raftery	08/12/1996
<i>Anas crecca</i>	Teal	25	Total wildfowl count.	Don Cotton & family	21/12/1996
<i>Anas crecca</i>	Teal	18	Total wildfowl count.	Don Cotton & Noel Raftery	13/02/2000
<i>Anas platyrhynchos</i>	Mallard	11	Total wildfowl count. Lake 50% frozen.	Don Cotton & Monica	15/01/2000
<i>Gallinula chloropus</i>	Moorhen	1		Don Cotton, Noel Raftery &	03/01/1994
<i>Gallinula chloropus</i>	Moorhen	2		Don Cotton	18/12/1994
<i>Gallinula chloropus</i>	Moorhen	1		Don Cotton & Niall Mogan	24/12/1994
<i>Gallinula chloropus</i>	Moorhen	3		Don Cotton	13/02/1995
<i>Gallinula chloropus</i>	Moorhen	2	Total wildfowl count.	Don Cotton	10/12/1995
<i>Gallinula chloropus</i>	Moorhen	4	Total wildfowl count.	Don Cotton	05/01/1996
<i>Gallinula chloropus</i>	Moorhen	4	Total wildfowl count. Only this species.	Don Cotton & Noel Raftery	18/03/1996
<i>Gallinula chloropus</i>	Moorhen	4	Total wildfowl count.	Don Cotton & Noel Raftery	08/12/1996
<i>Gallinula chloropus</i>	Moorhen	3	Total wildfowl count.	Don Cotton & family	17/01/1998
<i>Gallinula chloropus</i>	Moorhen	3	Total wildfowl count.	Don Cotton	17/02/1998
<i>Gallinula chloropus</i>	Moorhen	2	Total wildfowl count.	Don Cotton, Noel Raftery &	01/01/1999
<i>Gallinula chloropus</i>	Moorhen	2		Don Cotton & Martin Cotton	25/07/2000
<i>Gallinago gallinago</i>	Snip	1		Don Cotton & Noel Raftery	18/11/1995
<i>Gallinago gallinago</i>	Snip	1	Total wildfowl count.	Don Cotton	10/12/1995
<i>Gallinago gallinago</i>	Snip	1	Total wildfowl count.	Don Cotton & Noel Raftery	18/12/1995
<i>Gallinago gallinago</i>	Snip	2		Don Cotton & Martin Cotton	25/07/2000
<i>Numenius arquata</i>	Curlew	29		Don Cotton	18/12/1994
<i>Numenius arquata</i>	Curlew	1		Don Cotton	13/02/1995
<i>Numenius arquata</i>	Curlew	1	Total wildfowl count.	Don Cotton	10/12/1995
<i>Numenius arquata</i>	Curlew	12	Total wildfowl count.	Don Cotton	05/01/1996
<i>Numenius arquata</i>	Curlew	1	Total wildfowl count.	Don Cotton & Noel Raftery	08/12/1996
<i>Hirundo rustica</i>	Swallow	2		Don Cotton & Martin Cotton	25/07/2000
<i>Anthus pratensis</i>	Meadow pipit	1	Heard.	Don Cotton & Martin Cotton	25/07/2000
<i>Saxicola torquata</i>	Stonechat	1		Don Cotton & Martin Cotton	25/07/2000
<i>Carduelis carduelis</i>	Goldfinch	2	Heard.	Don Cotton & Martin Cotton	25/07/2000

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SCIENTIFIC NAME	COMMON NAME	No.	NOTES	OBSERVER(S)	DATE
<i>Chara</i> sp.				Don Cotton & Elaine Cotton	30/05/2000
<i>Equisetum fluviatile</i>	Water horsetail		Frequent.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Equisetum palustre</i>	Marsh horsetail		Frequent.	Don Cotton & Monica	04/07/2000
<i>Nymphaea alba</i>	White water-lily		Occasional.	Don Cotton & Monica	04/07/2000
<i>Nuphar lutea</i>	Yellow water-lily		Occasional.	Don Cotton & Monica	04/07/2000
<i>Carthamus palustris</i>	Marsh marigold		Frequent.	Don Cotton & Elaine Cotton	30/05/2000
<i>Ranunculus acris</i>	Meadow buttercup		Occasional.	Don Cotton & Monica	04/07/2000
<i>Ailurus glutinosus</i>	Alder		Occasional.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Stellaria media</i>	Common chickweed		Occasional.	Don Cotton & Monica	04/07/2000
<i>Stellaria graminea</i>	Lesser stitchwort		Frequent.	Don Cotton, Martin Cotton &	14/07/2000
<i>Cerastium fontanum</i>	Common mouse-ear		Occasional.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Lycchnis flo-cuculi</i>	Ragged-robin		Common at southern end of lake.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Rumex acetosa</i>	Common sorrel		Occasional.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Salix viminalis</i>	Osier		One tree.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Salix cinerea alba</i>	Rusty willow		Occasional.	Don Cotton & Monica	04/07/2000
<i>Salix aurita</i>	Eared willow		Occasional.	Don Cotton & Monica	04/07/2000
<i>Salix repens</i>	Creeping willow		Frequent.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Rorippa nasturtium-aquaticum</i>	Water-cress agg.		Small amount near well below road.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Cardamine pratensis</i>	Lady's-smock		Frequent.	Don Cotton & Elaine Cotton	30/05/2000
<i>Spiraea salicifolia</i>	Bridewort		One bush in marsh at southern end of lake.	Don Cotton, Martin Cotton &	14/07/2000
<i>Filipendula ulmaria</i>	Meadowsweet		Frequent.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Potentilla palustris</i>	Marsh cinquefoil		Frequent.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Potentilla anserina</i>	Silverweed		Frequent.	Don Cotton & Monica	04/07/2000
<i>Potentilla erecta</i>	Tormentil		Frequent.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Lotus corniculatus</i>	Bird's-foot trefoil		Occasional.	Don Cotton & Elaine Cotton	30/05/2000
<i>Lotus pedunculatus</i>	Greater bird's-foot trefoil		Uncommon at southern end of lake.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Vicia cracca</i>	Tufted vetch		First of 2000 in flower. Frequent.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Lathyrus pratensis</i>	Meadow vetchling		Frequent.	Don Cotton & Monica	04/07/2000
<i>Trifolium pratense</i>	Red clover		Occasional.	Don Cotton & Monica	04/07/2000
<i>Epilobium palustre</i>	Marsh willowherb		Frequent.	Don Cotton, Martin Cotton &	14/07/2000
<i>Linum catharticum</i>	Fairy flax		Occasional.	Don Cotton & Monica	04/07/2000
<i>Geranium dissectum</i>	Cut-leaved crane's-bill		Growing beside well below road.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Angelica sylvestris</i>	Wild angelica		Frequent.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Menyanthes trifoliata</i>	Bogbean		Frequent.	Don Cotton & Elaine Cotton	30/05/2000
<i>Prunella vulgaris</i>	Selfheal		Occasional.	Don Cotton & Monica	04/07/2000
<i>Veronica chamaedrys</i>	Germander speedwell		Frequent.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Pinguicula vulgaris</i>	Common butterwort		Frequent.	Don Cotton & Elaine Cotton	30/05/2000
<i>Galium palustre</i>	Common marsh-bedstraw		Frequent.	Don Cotton & Monica	04/07/2000
<i>Valeriana officinalis</i>	Common valerian		Occasional at northern end of lake.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Succisa pratensis</i>	Devil's-bit scabious		Frequent.	Don Cotton & Monica	04/07/2000
<i>Cirsium dissectum</i>	Meadow thistle		Three flowering plants.	Don Cotton & Monica	04/07/2000
<i>Cirsium palustre</i>	Marsh thistle		Frequent.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Centaurea nigra</i>	Common knapweed		Frequent.	Don Cotton & Monica	04/07/2000
<i>Sonchus asper</i>	Prickly sow-thistle		Small amount near well below road.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Crepis paludosa</i>	Marsh hawk's-beard		First of 2000 in flower. Occasional. About 10 plants noted.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Potamogeton lucens</i>	Shining pondweed	1	Occasional.	Don Cotton, Martin Cotton &	14/07/2000
<i>Juncus inflexus</i>	Hard rush		Uncommon.	Don Cotton & Monica	04/07/2000
<i>Juncus conglomeratus</i>	Compact rush		Frequent.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Luzula multiflora congesta</i>	Congested heath		Uncommon.	Don Cotton & Elaine Cotton	30/05/2000
<i>Eriophorum angustifolium</i>	Common cottongrass		Common at southern end of lake.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Cladium mariscus</i>	Great fen-sedge		At least three clumps each of a few square meters.	Don Cotton & Elaine Cotton	30/05/2000
<i>Carex periculata</i>	Greater tussock-sedge		Frequent.	Don Cotton & Elaine Cotton	30/05/2000
<i>Carex diandra</i>	Lesser tussock-sedge		Occasional.	Don Cotton & Monica	04/07/2000
<i>Carex lasiocarpa</i>	Brown sedge		Common.	Don Cotton & Elaine Cotton	30/05/2000
<i>Carex rostrata</i>	Bottle sedge		Frequent.	Don Cotton & Elaine Cotton	30/05/2000
<i>Carex flacca</i>	Glaucous sedge		Common.	Don Cotton & Monica	04/07/2000
<i>Carex panicea</i>	Common sedge		Frequent.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Carex verticillata brachytricha</i>	Long-stalked		Occasional.	Don Cotton & Monica	04/07/2000
<i>Carex verticillata oedocarpa</i>	Common yellow-sedge		Occasional.	Don Cotton & Monica	04/07/2000
<i>Carex nigra</i>	Common sedge		Occasional.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Festuca arundinacea</i>	Tall fescue		Frequent.	Don Cotton & Monica	04/07/2000
<i>Cynosurus cristatus</i>	Crested dog's-tail		Common.	Don Cotton & Monica	04/07/2000
<i>Briza media</i>	Quaking grass		Frequent.	Don Cotton & Elaine Cotton	30/05/2000
<i>Dactylis glomerata</i>	Cod's-foot grass		Common.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Hellodictyon pubescens</i>	Dowry oat-grass		Locally common.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Holcus lanatus</i>	Yorkshire-fog		Common.	Don Cotton & Monica	04/07/2000
<i>Anthoxanthum odoratum</i>	Sweet vernal-grass		Common.	Don Cotton & Monica	04/07/2000
<i>Phleum pratense</i>	Timothy		Occasional.	Don Cotton, Martin Cotton &	14/07/2000
<i>Moisita caryus</i>	Purple moor-grass		Uncommon.	Don Cotton & Monica	04/07/2000

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SCIENTIFIC NAME	COMMON NAME	No.	NOTES	OBSERVER(S)	DATE
<i>Phragmites australis</i>	Common reed		Common.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Sparganium erectum</i>	Branched bur-reed		Rare. Just one plant seen.	Don Cotton, Martin Cotton &	14/07/2000
<i>Iris pseudacorus</i>	Yellow iris		Frequent.	Don Cotton & Elaine Cotton	30/05/2000
<i>Lolium ovata</i>	Common meadowgrass		Frequent. About 30 plants noted.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Gymnadenis conopsea</i>	Fragrant orchid	1	Rare.	Don Cotton, Martin Cotton &	14/07/2000
<i>Coeloglossum viride</i>	Frog orchid		First of 2000 in flower. Three.	Don Cotton & Monica	04/07/2000
<i>Dactylorhiza fuchsii</i>	Common spotted orchid		Common.	Don Cotton & Monica	04/07/2000
<i>Dactylorhiza incarnata</i>	Early marsh-orchid	1	Partly submerged in lake.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Lymnaea stagnalis</i>				Don Cotton & Monica	04/07/2000
<i>Lestes sponsa</i>		1	First of 2000. Female.	Don Cotton, Martin Cotton &	14/07/2000
<i>Pyrhosoma nymphula</i>		1		Don Cotton	20/06/1981
<i>Pyrhosoma nymphula</i>		c10		Don Cotton & Elaine Cotton	30/05/2000
<i>Pyrhosoma nymphula</i>		1		Don Cotton & Siobhan Ryan	12/06/2000
<i>Coenagrion puella</i>		1		Don Cotton & Siobhan Ryan	12/06/2000
<i>Coenagrion punctatum</i>		c5		Don Cotton, Martin Cotton &	14/07/2000
<i>Enallagma cyathigerum</i>		c10		Don Cotton	20/06/1981
<i>Enallagma cyathigerum</i>		c20		Don Cotton & Elaine Cotton	30/05/2000
<i>Enallagma cyathigerum</i>		c10		Don Cotton & Siobhan Ryan	12/06/2000
<i>Ischnura elegans</i>		1		Don Cotton	20/06/1981
<i>Ischnura elegans</i>		c5		Don Cotton & Elaine Cotton	30/05/2000
<i>Aeschna grandis</i>		2		Don Cotton & Monica	04/07/2000
<i>Brachytron pratense</i>		1		Don Cotton & Elaine Cotton	30/05/2000
<i>Libellula quadrimaculata</i>		1		Don Cotton	20/06/1981
<i>Libellula quadrimaculata</i>		2		Don Cotton & Elaine Cotton	30/05/2000
<i>Omocestus viridulus</i>	Common green	2		Don Cotton & Monica	04/07/2000
<i>Pieris napi</i>	Green-veined white	1		Don Cotton & Elaine Cotton	30/05/2000
<i>Pararge aegeria</i>	Speckled wood	1		Don Cotton & Monica	04/07/2000
<i>Maniola jurtina</i>	Meadow brown	c5		Don Cotton & Monica	04/07/2000
<i>Coenonympha pamphilus</i>	Small heath			Don Cotton	20/06/1981
<i>Aphantopus hyperantus</i>	Ringlet	c10		Don Cotton & Monica	04/07/2000
<i>Xanthopha montana</i>	Silver-ground carpet	1		Don Cotton & Siobhan Ryan	12/06/2000
<i>Eustrotia uncula</i>	Silver hook	2		Don Cotton & Monica	04/07/2000
<i>Rivula sericealis</i>	Straw dot	c5		Don Cotton & Monica	04/07/2000
<i>Sicus ferrugineus</i>		1	This species assuming there are no others similar species in genus.	Don Cotton, Martin Cotton &	14/07/2000
<i>Haematopota pluvialis</i>		3		Don Cotton & Monica	04/07/2000
<i>Chrysopa relicta</i>		1		Don Cotton, Martin Cotton &	14/07/2000
<i>Tibellus maritimus</i>		1	Female.	Don Cotton, Martin Cotton &	14/07/2000
<i>Rana temporaria</i>	Common frog	c30		Don Cotton & Siobhan Ryan	12/06/2000
<i>Ardea cinerea</i>	Grey heron	1	Total widgeon count.	Don Cotton	10/12/1995
<i>Cygnus olor</i>	Mute swan	2	Adults.	Don Cotton & Niall Mogan	24/12/1994
<i>Cygnus olor</i>	Mute swan	2	Adults.	Don Cotton & Noel Rafferty	18/11/1995
<i>Cygnus olor</i>	Mute swan	2	Total widgeon count. Adults.	Don Cotton	10/12/1995
<i>Cygnus olor</i>	Mute swan	2	Total widgeon count. Adults.	Don Cotton & Noel Rafferty	08/12/1996
<i>Cygnus olor</i>	Mute swan	1	Total widgeon count. Adult.	Don Cotton	17/02/1998
<i>Cygnus olor</i>	Mute swan	5	Total widgeon count. Lake 75% frozen. 3 adults and 2 juveniles.	Don Cotton & Monica	15/01/2000
<i>Cygnus olor</i>	Mute swan	6	6 adults and 2 juveniles.	Noel Rafferty and Fergal	15/01/2000
<i>Cygnus cygnus</i>	Whooper swan	6	Total widgeon count. Adults. On water. No neck rings.	Don Cotton	05/01/1998
<i>Anas platyrhynchos</i>	Mallard	4	2 males and 2 females.	Don Cotton & Niall Mogan	24/12/1994
<i>Anas platyrhynchos</i>	Mallard	2	Total widgeon count.	Don Cotton & Noel Rafferty	08/12/1996
<i>Anas platyrhynchos</i>	Mallard	5	Total widgeon count.	Don Cotton	17/02/1998
<i>Mergus serrator</i>	Red-breasted merganser	2	Breeding pair. Watched at 100 yards from a car on the Coltooney to	R.J. Ussher	10/06/1891
<i>Accipiter nisus</i>	Sparrowhawk	1		Don Cotton & Niall Mogan	24/12/1994
<i>Gallinula chloropus</i>	Moorhen	1		Don Cotton, Noel Rafferty &	09/01/1994
<i>Gallinago gallinago</i>	Snipe	c10		Don Cotton & Niall Mogan	24/12/1994
<i>Gallinago gallinago</i>	Snipe	50	Total widgeon count. Lake 75% frozen. All in one small marsh and flew up as	Don Cotton & Monica	15/01/2000
<i>Numenius arquata</i>	Curlew	9	Total widgeon count.	Don Cotton	05/01/1998
<i>Apus apus</i>	Swift	1	Flying over lake.	Don Cotton, Martin Cotton &	14/07/2000
<i>Delichon urbica</i>	House martin	1		Don Cotton & Siobhan Ryan	12/06/2000
<i>Acrocephalus schoenobaenus</i>	Sedge warbler	2	At least 2 males holding territory.	Don Cotton & Siobhan Ryan	12/06/2000
<i>Emberiza schoeniclus</i>	Reed bunting		Singing.	Don Cotton & Elaine Cotton	30/05/2000
<i>Emberiza schoeniclus</i>	Reed bunting	2	At least 2 males holding territory.	Don Cotton & Siobhan Ryan	12/06/2000

Drumderry near Castlebaldwin

Sligo

G 749155

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>No.</u>	<u>NOTES</u>	<u>OBSERVER(S)</u>	<u>DATE</u>
<i>Atthyrum ibi-lemna</i>	Lady-fem		Occasional.	Don Cotton	17/07/2000
<i>Stellaria graminea</i>	Lesser stitchwort		Frequent.	Don Cotton	17/07/2000
<i>Salix cinerea detrita</i>	Rusty willow		Frequent.	Don Cotton	17/07/2000
<i>Polygonum ulmaria</i>	Meadowweet		Common.	Don Cotton	17/07/2000
<i>Potentilla peustinis</i>	Marsh cinquefoil		Occasional.	Don Cotton	17/07/2000
<i>Potentilla erecta</i>	Tormentil		Common.	Don Cotton	17/07/2000
<i>Viola cracca</i>	Tufted vetch		Frequent.	Don Cotton	17/07/2000
<i>Lathyrus pratensis</i>	Meadow vetchling		Frequent.	Don Cotton	17/07/2000
<i>Epilobium palustre</i>	Marsh willowherb		Frequent.	Don Cotton	17/07/2000
<i>Angelica sylvestris</i>	Wild angelica		Frequent.	Don Cotton	17/07/2000
<i>Triglochin palustre</i>	Marsh arrowgrass		Occasional.	Don Cotton	17/07/2000
<i>Luzula multiflora</i>	Heath wood-rush		Occasional.	Don Cotton	17/07/2000
<i>Carex panicea</i>	Greater tussock-sedge		Frequent.	Don Cotton	17/07/2000
<i>Carex disticha</i>	Lesser tussock-sedge		Common.	Don Cotton	17/07/2000
<i>Carex disticha</i>	Brown sedge		Frequent.	Don Cotton	17/07/2000
<i>Carex panicea</i>	Common sedge		Occasional.	Don Cotton	17/07/2000
<i>Pararge aegeria</i>	Speckled wood	1		Don Cotton	17/07/2000
<i>Aphantopus hyperantus</i>	Pinglet	3		Don Cotton	17/07/2000
<i>Locustella naevia</i>	Grasshopper warbler		Singing.	Don Cotton	17/07/2000

Cleavly bog, Castlebaldwin
Sligo
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SCIENTIFIC NAME	COMMON NAME	No.	NOTES	OBSERVER(S)	DATE
<i>Pteridium aquilinum</i>	Bracken		Locally dominant in bog	Don Cotton	02/07/2000
<i>Athyrium filix-femina</i>	Lady-fem		Frequent around margins.	Don Cotton	02/07/2000
<i>Dryopteris filix-mas</i>	Male-fem		Uncommon in bog.	Don Cotton	02/07/2000
<i>Ranunculus acris</i>	Meadow buttercup		Occasional in boggy pasture.	Don Cotton	02/07/2000
<i>Ranunculus flammula</i>	Lesser spearwort		Uncommon in boggy pasture.	Don Cotton	02/07/2000
<i>Betula pubescens</i>	Dowry birch		Occasional in bog.	Don Cotton	02/07/2000
<i>Stellaria virginica</i> (=alpine)	Bog stitchwort		Uncommon in boggy pasture.	Don Cotton	02/07/2000
<i>Cerastium fontanum</i>	Common mouse-ear		Occasional in boggy pasture.	Don Cotton	02/07/2000
<i>Rumex acetosella</i>	Sheep's sorrel		Occasional in boggy pasture.	Don Cotton	02/07/2000
<i>Drosera rotundifolia</i>	Round-leaved sundew		Frequent in boggy pasture.	Don Cotton	02/07/2000
<i>Salix cinerea</i> ssp. <i>dehida</i>	Rusty willow		Uncommon in bog.	Don Cotton	02/07/2000
<i>Salix aurita</i>	Emerald willow		Frequent in bog.	Don Cotton	02/07/2000
<i>Rhododendron ponticum</i>	Rhododendron		Uncommon in bog.	Don Cotton	02/07/2000
<i>Calluna vulgaris</i>	Ling (plant)		Dominant in bog, uncommon in boggy pasture.	Don Cotton	02/07/2000
<i>Erica tetralix</i>	Cross-leaved heath		Occasional.	Don Cotton	02/07/2000
<i>Vaccinium myrtillus</i>	Bilberry		Frequent around margins.	Don Cotton	02/07/2000
<i>Rubus fruticosus</i> agg.	Common bramble		Frequent around margins.	Don Cotton	02/07/2000
<i>Potentilla erecta</i>	Tornentil		Frequent in bog and boggy pasture.	Don Cotton	02/07/2000
<i>Trifolium spars</i>	White clover		Frequent in boggy pasture.	Don Cotton	02/07/2000
<i>Trifolium pratense</i>	Red clover		Uncommon in boggy pasture.	Don Cotton	02/07/2000
<i>Ulex europaeus</i>	Gorse		Frequent around margins.	Don Cotton	02/07/2000
<i>Polygala serpyllifolia</i>	Heath milwort		Uncommon in bog.	Don Cotton	02/07/2000
<i>Digitalis purpurea</i>	Forglows		Occasional in boggy pasture.	Don Cotton	02/07/2000
<i>Veronica serpyllifolia</i>	Thyme-leaved speedwell		Uncommon in boggy pasture.	Don Cotton	02/07/2000
<i>Pedicularis sylvatica</i>	Common lousewort		Uncommon in boggy pasture.	Don Cotton	02/07/2000
<i>Galium saxatile</i>	Heath bedstraw		Occasional in boggy pasture.	Don Cotton	02/07/2000
<i>Succisa pratensis</i>	Devil's-bit scabious		Frequent in bog.	Don Cotton	02/07/2000
<i>Senecio aquaticus</i>	Marsh ragwort		Uncommon in boggy pasture.	Don Cotton	02/07/2000
<i>Juncus squarrosus</i>	Heath rush		Frequent in bog and boggy pasture.	Don Cotton	02/07/2000
<i>Juncus effusus</i>	Soft rush		Frequent in boggy pasture.	Don Cotton	02/07/2000
<i>Luzula multiflora</i> congesta	Congested heath		Frequent in bog and boggy pasture.	Don Cotton	02/07/2000
<i>Eriophorum vaginatum</i>	Hare's-tail cottongrass		Frequent in bog and boggy pasture.	Don Cotton	02/07/2000
<i>Tachochorum oespiceum</i>	Deergrass		Common in bog and frequent in boggy pasture.	Don Cotton	02/07/2000
<i>Carex echinata</i>	Star sedge		Frequent in boggy pasture.	Don Cotton	02/07/2000
<i>Carex panicea</i>	Carnation sedge		Frequent in boggy pasture.	Don Cotton	02/07/2000
<i>Carex nigra</i>	Common sedge		Occasional in boggy pasture.	Don Cotton	02/07/2000
<i>Lolium perenne</i>	Perennial rye-grass		Uncommon in boggy pasture.	Don Cotton	02/07/2000
<i>Cynosurus cristatus</i>	Crested dog's-tail		Occasional in boggy pasture.	Don Cotton	02/07/2000
<i>Holcus lanatus</i>	Yorkshire-fog		Common in boggy pasture.	Don Cotton	02/07/2000
<i>Anthoxanthum odoratum</i>	Sweet vernal-grass		Frequent.	Don Cotton	02/07/2000
<i>Molinia caerulea</i>	Purple moor-grass		Common in bog and frequent in boggy pasture.	Don Cotton	02/07/2000
<i>Narthecium ossifragum</i>	Bog asphodel		Frequent in boggy pasture.	Don Cotton	02/07/2000
<i>Dactyloctenium maculata</i>	Heath spotted orchid		Frequent in boggy pasture.	Don Cotton	02/07/2000
<i>Pimpla rufipes</i>		c6		Don Cotton	02/07/2000
<i>Enallagma cyathigerum</i>		c30		Don Cotton	02/07/2000
<i>Sympetrum sanguineum</i>		1	First of 2000. Teners male.	Don Cotton	02/07/2000
<i>Pteronarcys agaria</i>	Spotted wood	1		Don Cotton	02/07/2000
<i>Melicope julina</i>	Meadow brown	2		Don Cotton	02/07/2000
<i>Leucoempsa quercus calumnae</i>	Northern eggar	c6		Don Cotton	02/07/2000
<i>Emetura stomaria</i>	Common heath moth	c10		Don Cotton	02/07/2000
<i>Haematopora pluvialis</i>	Common dig	6		Don Cotton	02/07/2000
<i>Pyrophaena granditarsis</i>		1		Don Cotton	02/07/2000
<i>Vespaula rufa</i>	Red wasp	1		Don Cotton	02/07/2000
<i>Nemophila versicolor</i>	Sexton or burying beetle	1	Collected.	Don Cotton	02/07/2000
<i>Anthus pratensis</i>	Meadow pipit	2	Singing.	Don Cotton	02/07/2000
<i>Troglodytes troglodytes</i>	Wren	1	Singing.	Don Cotton	02/07/2000
<i>Saxicola torquatus</i>	Stonechat	3	Family.	Don Cotton	02/07/2000
<i>Turdus merula</i>	Blackbird	1		Don Cotton	02/07/2000
<i>Sylvia communis</i>	Whitthroat	1	Singing. Heard on previous visits a week earlier.	Don Cotton	02/07/2000
<i>Phylloscopus trochilus</i>	Willow warbler	2	Singing.	Don Cotton	02/07/2000
<i>Acrocephalus palustris</i>	Redpoll	1	Flying overhead.	Don Cotton	02/07/2000
<i>Emberiza hortulana</i>	Reed bunting	1	Singing.	Don Cotton	02/07/2000

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SCIENTIFIC NAME	COMMON NAME	No.	NOTES	OBSERVER(S)	DATE	
<i>Equisetum fluviatile</i>	Water horsetail		Frequent	Don Cotton	27/06/2000	
<i>Caltha palustris</i>	Marsh marigold		Frequent	Don Cotton	27/06/2000	
<i>Ranunculus flammula</i>	Lesser spearwort		Occasional	Don Cotton	27/06/2000	
<i>Stellaria uliginosa (vulgaris)</i>	Bog stitchwort		Occasional	Don Cotton	27/06/2000	
<i>Lycchnis flo-cuculi</i>	Ragged-robin		Frequent	Don Cotton	27/06/2000	
<i>Salix viminalis</i>	Osier		Occasional	Don Cotton	27/06/2000	
<i>Salix cinerea oleifolia</i>	Rusty willow		Occasional	Don Cotton	27/06/2000	
<i>Rorippa nasturtium-aquaticum</i>	Water-cress		Frequent	Don Cotton	27/06/2000	
<i>Cardamine pratensis</i>	Lady's-smock		Frequent	Don Cotton	27/06/2000	
<i>Filipendula ulmaria</i>	Meadowweet		Frequent	Don Cotton	27/06/2000	
<i>Rubus fruticosus</i> agg.	Common bramble		Occasional	Don Cotton	27/06/2000	
<i>Potentilla palustris</i>	Marsh cinquefoil			Marin Cawley and Don	12/06/1992	
<i>Potentilla palustris</i>	Marsh cinquefoil		Occasional	Don Cotton	27/06/2000	
<i>Potentilla anserina</i>	Silverweed		Occasional	Don Cotton	27/06/2000	
<i>Potentilla erecta</i>	Tomentil		Frequent	Don Cotton	27/06/2000	
<i>Crateagus monogyne</i>	Hawthorn		Occasional	Don Cotton	27/06/2000	
<i>Viola cracca</i>	Tufted vetch		Frequent	Don Cotton	27/06/2000	
<i>Viola sepium</i>	Bush vetch		Occasional	Don Cotton	27/06/2000	
<i>Trifolium repens</i>	White clover		Occasional	Don Cotton	27/06/2000	
<i>Trifolium pratense</i>	Red clover		Occasional	Don Cotton	27/06/2000	
<i>Ulex europaeus</i>	Gorse		Occasional	Don Cotton	27/06/2000	
<i>Epilobium palustre</i>	Marsh willowherb		Frequent	Don Cotton	27/06/2000	
<i>Hydrocotyle vulgaris</i>	Marsh pennywort		Common	Don Cotton	27/06/2000	
<i>Oxalis violacea</i>	Coxbane		Common	Don Cotton	27/06/2000	
<i>Angelica sylvestris</i>	Wild angelica		Frequent	Don Cotton	27/06/2000	
<i>Menyanthes trifoliata</i>	Bogbean		Common	Don Cotton	27/06/2000	
<i>Myosotis laxa</i>	Tufted forget-me-not		Occasional	Don Cotton	27/06/2000	
<i>Mentha aquatica</i>	Water mint		Frequent	Don Cotton	27/06/2000	
<i>Callitriche</i> spp.	Water-stonecrop		Occasional	Don Cotton	27/06/2000	
<i>Veronica scutellata</i>	Marsh speedwell		Frequent	Don Cotton	27/06/2000	
<i>Veronica beccabunga</i>	Brooklime		Uncommon	Don Cotton	27/06/2000	
<i>Rhinanthus minor</i>	Yellow-rattle		Frequent	Don Cotton	27/06/2000	
<i>Pedicularis palustris</i>	Marsh lousewort		Occasional	Don Cotton	27/06/2000	
<i>Galium palustre</i>	Common marsh-bedstraw		Common	Don Cotton	27/06/2000	
<i>Cirsium palustre</i>	Marsh bistle		Occasional	Don Cotton	27/06/2000	
<i>Triglochin palustris</i>	Marsh arrowgrass		03/06/1999 Present	Don Cotton	27/06/2000	
<i>Potamogeton natans</i>	Broad-leaved pondweed		Occasional	Don Cotton	27/06/2000	
<i>Lemna minor</i>	Common duckweed		Frequent	Don Cotton	27/06/2000	
<i>Lemna trisulca</i>	Ivy-leaved duckweed		Frequent	Don Cotton	27/06/2000	
<i>Juncus effusus</i>	Soft rush		Frequent	Don Cotton	27/06/2000	
<i>Luzula multiflora</i>	Heath wood-rush		Occasional	Don Cotton	27/06/2000	
<i>Eriophorum angustifolium</i>	Common cottongrass			Don Cotton	03/06/1999	
<i>Eleocharis palustris</i>	Common spike-rush		Frequent	Don Cotton	27/06/2000	
<i>Eleocharis multicaulis</i>	Many-stalked spike-rush		Locally frequent	Don Cotton	27/06/2000	
<i>Carex diandra</i>	Lesser Tussock-sedge		Common	Don Cotton	27/06/2000	
<i>Carex echinata</i>	Star sedge		Occasional	Don Cotton	27/06/2000	
<i>Carex acutiformis</i>	Lesser pond-sedge		Locally abundant	Substantial stand near where stream enters lake at	Don Cotton	27/06/2000
<i>Carex rostrata</i>	Bottle sedge		Frequent	Don Cotton	27/06/2000	
<i>Carex nigra</i>	Common sedge		Occasional	Don Cotton	27/06/2000	
<i>Cynodon dactylon</i>	Crested dog's-tail		Frequent	Don Cotton	27/06/2000	
<i>Dactyloctenium aegyptium</i>	Cock's-foot grass		Frequent	Don Cotton	27/06/2000	
<i>Glyceria declinata</i>	Small sweet-grass		Occasional	Don Cotton	27/06/2000	
<i>Holcus lanatus</i>	Yorkshire-fog		Common	Don Cotton	27/06/2000	
<i>Anthoxanthum odoratum</i>	Sweet vernal-grass		Common	Don Cotton	27/06/2000	
<i>Alopecurus pratensis</i>	Marsh foxtail		Occasional	Don Cotton	27/06/2000	
<i>Phragmites australis</i>	Common reed		Common	Don Cotton	27/06/2000	
<i>Spergularia erecta</i>	Branched bur-reed		Occasional	Don Cotton	27/06/2000	
<i>Typha latifolia</i>	Reed-mace		Occasional	Don Cotton	27/06/2000	
<i>Iris pseudacorus</i>	Yellow iris		Frequent	Don Cotton	27/06/2000	
<i>Dactyloctenium aegyptium</i>	Common spotted orchid		Occasional	Don Cotton	27/06/2000	
<i>Dactyloctenium aegyptium</i>	Heath spotted orchid		Uncommon	Don Cotton	27/06/2000	
<i>Coenagrion lunulatum</i>			Colony	Marin Cawley and Don	12/06/1992	
<i>Coenagrion pulegiatum</i>				Marin Cawley and Don	12/06/1992	
<i>Coenagrion pulegiatum</i>				Don Cotton	03/06/1999	
<i>Coenagrion pulegiatum</i>				Don Cotton	27/06/2000	
<i>Coenagrion pulegiatum</i>				Don Cotton	03/06/1999	
<i>Eriophorum angustifolium</i>				Marin Cawley and Don	12/06/1992	
<i>Eriophorum angustifolium</i>				Don Cotton	27/06/2000	

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SCIENTIFIC NAME	COMMON NAME	No.	NOTES	OBSERVER(S)	DATE
<i>Icthyura elegans</i>				Martin Cawley and Don	12/06/1992
<i>Icthyura elegans</i>				Don Cotton	27/06/2000
<i>Brachytron pratense</i>				Martin Cawley and Don	12/06/1992
<i>Libellula quadrimaculata</i>				Martin Cawley and Don	12/06/1992
<i>Libellula quadrimaculata</i>		1		Don Cotton	03/06/1999
<i>Libellula quadrimaculata</i>		c5	Drain feeding into lake.	Don Cotton	27/06/2000
<i>Haematopota crassicornis</i>	Black dog	1	Collected	Don Cotton	27/06/2000
<i>Catadictya lemnata</i>	Small china-mark	c5		Don Cotton	27/06/2000
<i>Leptidea sinapis</i>	Wood white			Martin Cawley and Don	12/06/1992
<i>Pieris napi</i>	Green-veined white	3		Don Cotton	27/06/2000
<i>Anthocharis cardamines</i>	Orange-tip	1	Egg on <i>Cardamine pratensis</i>	Don Cotton	03/06/1999
<i>Lycæna phlæas</i>	Small copper			Martin Cawley and Don	12/06/1992
<i>Vanessa atalanta</i>	Red admiral	1		Don Cotton	27/06/2000
<i>Eurodryas aurinia</i>	Marsh tortoisery	c10		Martin Cawley and Don	12/06/1992
<i>Aphantopus hyperantus</i>	Pinglet	2		Don Cotton	02/07/2000
<i>Tyria jacobæae</i>	Chinabar moth			Martin Cawley and Don	12/06/1992
<i>Eustralia uncula</i>	Silver hook			Martin Cawley and Don	12/06/1992
<i>Autographa gamma</i>	Silver Y	>5		Don Cotton	27/06/2000
<i>Helophorus pendulus</i>				Martin Cawley and Don	12/06/1992
<i>Pyrophaena granditarsis</i>				Don Cotton	27/06/2000
<i>Bombus pascuorum</i>		1		Don Cotton	27/06/2000
<i>Percus fluitans</i>	Percy			Local information pers	27/06/2000
<i>Eroica luciae</i>	Pika			Local information pers	27/06/2000
<i>Ardea cinerea</i>	Gray heron	1		Martin Cawley and Don	12/06/1992
<i>Cygnus olor</i>	Mute swan	1		Don Cotton, Noel Raftery &	03/01/1994
<i>Cygnus olor</i>	Mute swan	1	Total wildfowl count.	Don Cotton	28/01/1994
<i>Cygnus olor</i>	Mute swan	2	Total wildfowl count. Adults.	Don Cotton & family	17/01/1998
<i>Cygnus olor</i>	Mute swan	4	Total wildfowl count. 2 adults and 2 juveniles.	Don Cotton & Noel Raftery	20/12/1998
<i>Cygnus olor</i>	Mute swan	4	Total wildfowl count. 2 adults and 2 juveniles.	Don Cotton, Noel Raftery &	01/01/1999
<i>Cygnus olor</i>	Mute swan	2		Don Cotton	03/06/1999
<i>Cygnus olor</i>	Mute swan	2	Total wildfowl count. Adults.	Don Cotton & Noel Raftery	17/10/1999
<i>Cygnus olor</i>	Mute swan	2	Total wildfowl count.	Martin Enright	17/01/2000
<i>Cygnus olor</i>	Mute swan	2	2 adults and 2 cygnets.	Don Cotton	27/06/2000
<i>Cygnus cygnus</i>	Whooper swan	1	Adult	Don Cotton	04/01/1987
<i>Anas crecca</i>	Teal	8		Don Cotton	04/01/1987
<i>Anas platyrhynchos</i>	Mallard	2		Don Cotton	01/01/1993
<i>Anas platyrhynchos</i>	Mallard	3	Total wildfowl count.	Don Cotton	28/01/1994
<i>Anas platyrhynchos</i>	Mallard	2	Total wildfowl count.	Don Cotton & Noel Raftery	20/12/1998
<i>Anas platyrhynchos</i>	Mallard	1	Total wildfowl count.	Don Cotton, Noel Raftery &	01/01/1999
<i>Anas platyrhynchos</i>	Mallard	7		Don Cotton	26/06/2000
<i>Aythya ferina</i>	Pochard	26		Don Cotton	12/01/1986
<i>Aythya ferina</i>	Pochard	2		Don Cotton, Noel Raftery &	03/01/1994
<i>Aythya ferina</i>	Pochard	1	Total wildfowl count. Male	Don Cotton	28/01/1994
<i>Aythya fulgula</i>	Tufted duck	1		Don Cotton	12/01/1986
<i>Aythya fulgula</i>	Tufted duck	1		Don Cotton	04/01/1987
<i>Aythya fulgula</i>	Tufted duck	3		Don Cotton	01/01/1993
<i>Aythya fulgula</i>	Tufted duck	2	Total wildfowl count. Both males	Don Cotton	28/01/1994
<i>Aythya fulgula</i>	Tufted duck	2	Total wildfowl count. Male and female.	Don Cotton & family	17/01/1998
<i>Rallus aquaticus</i>	Water rail		Heard	Martin Cawley and Don	12/06/1992
<i>Rallus aquaticus</i>	Water rail	1	Heard at very close quarters.	Don Cotton	27/06/2000
<i>Gallinula chloropus</i>	Moorhen	4		Don Cotton	04/01/1987
<i>Gallinula chloropus</i>	Moorhen		Heard	Martin Cawley and Don	12/06/1992
<i>Gallinula chloropus</i>	Moorhen	3	Total wildfowl count.	Don Cotton	05/01/1996
<i>Gallinula chloropus</i>	Moorhen	3	Total wildfowl count.	Don Cotton & Noel Raftery	20/12/1998
<i>Gallinula chloropus</i>	Moorhen	2	Total wildfowl count.	Don Cotton, Noel Raftery &	01/01/1999
<i>Gallinula chloropus</i>	Moorhen	2	Total wildfowl count.	Don Cotton & Noel Raftery	17/10/1999
<i>Gallinula chloropus</i>	Moorhen	3		Don Cotton	27/06/2000
<i>Gallinula chloropus</i>	Moorhen	3	1 adult and 2 juveniles in small willow at water's edge.	Don Cotton	02/07/2000
<i>Fulica atra</i>	Coot	1		Don Cotton	12/01/1986
<i>Fulica atra</i>	Coot	1	Total wildfowl count.	Don Cotton & family	17/01/1998
<i>Fulica atra</i>	Coot	2		Don Cotton	27/06/2000
<i>Gallinago gallinago</i>	Shipe	1		Don Cotton	27/06/2000
<i>Riparia nasuta</i>	Sand martin	c20	Feeding over water.	Don Cotton	02/07/2000
<i>Hirundo rustica</i>	Swallow	c15		Don Cotton	27/06/2000
<i>Hirundo rustica</i>	Swallow	c15	Feeding over water.	Don Cotton	02/07/2000
<i>Delichon urbica</i>	House martin	1		Don Cotton	27/06/2000
<i>Anthus pratensis</i>	Meadow pipit			Don Cotton	27/06/2000
<i>Acrocephalus schoenobaenus</i>	Sedge warbler	3	Singing	Don Cotton	27/06/2000
<i>Emoentia alpestris</i>	Reed bunting	1	Singing	Don Cotton	27/06/2000

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SCIENTIFIC NAME	COMMON NAME	No.	NOTES	OBSERVER(S)	DATE
<i>Equisetum arvense</i>	Field horsetail		Locally abundant.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Phyllitis scolopendrium</i>	Hart's-tongue fern		Frequent.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Athyrium filix-femina</i>	Lady-fern		Occasional.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Polystichum setiferum</i>	Soft shield-fern		Frequent.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Dryopteris filix-mas</i>	Wale-fern		Common.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Dryopteris affinis</i>	Scaly male-fern		Common.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Dryopteris dilatata</i>	Broad buckler-fern		Common.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Ranunculus acris</i>	Meadow buttercup		Occasional.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Urtica dioica</i>	Common nettle		Occasional.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Stellaria holostea</i>	Greener stitchwort		Occasional.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Hypericum androsaemum</i>	Tutsan		Occasional.	Don Cotton	02/07/2000
<i>Viola riviniana</i>	Common dog-violet		Frequent.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Salix cinerea cistifolia</i>	Rusty willow		Frequent.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Primula vulgaris</i>	Primrose		Frequent.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Lysimachia nemorum</i>	Yellow gippenet		Uncommon.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Ritipendula ulmaria</i>	Meadowsweet		Frequent.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Fibula fruticosa</i> agg.	Common bumble		Frequent.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Potentilla arguta</i>	Trailing cinquefoil		Occasional.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Fragaria vesca</i>	Wild strawberry		Frequent.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Galium urbanum</i>	Wood evening		Occasional.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Rosa</i> spp.	rose sp.		Occasional.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Crataegus monogyna</i>	Hawthorn		Common.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Viola sepium</i>	Bush vetch		Frequent.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Lathyrus pratensis</i>	Meadow vetchling		Occasional.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Ulex europaeus</i>	Gorse		Frequent.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Epilobium parviflorum</i>	Hoary willowherb		Frequent.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Ilex aquifolium</i>	Holly		Occasional.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Acer pseudoplatanus</i>	Sycamore		Occasional.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Geranium robertianum</i>	Herb-Robert		Frequent.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Hedera helix</i>	Ivy		Frequent.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Conopodium majus</i>	Pignut		Frequent.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Asplenium adnigrum</i>	Ground-elder / Goutweed		Occasional.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Horridulum sphenoclytium</i>	Common hogweed		Occasional.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Toxifera japonica</i>	Upright hedge-parsley		Occasional.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Fraxinus excelsior</i>	Ash		Common.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Scrophularia nodosa</i>	Common figwort		One plant.	Don Cotton	02/07/2000
<i>Digitalis purpurea</i>	Foxglove		Frequent.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Veronica chamaedryx</i>	Germander speedwell		Frequent.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Sambucus nigra</i>	Elder		Frequent.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Symphoricarpos albus</i>	Snowberry		Frequent.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Lonicera nitida</i>	garden hedge		Frequent.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Oenothera patens</i>	Marsh thistle		Uncommon.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Lapsana communis</i>	Nippewort		Occasional.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Sonchus asper</i>	Prickly sow-thistle		Occasional.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Bellis perennis</i>	Daisy		Occasional.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Achillea millefolium</i>	Yarrow		Occasional.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Dactylis glomerata</i>	Cook's-foot grass		Frequent.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Anthriscus silvestris</i>	False oat-grass		Common.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Anthoxanthum odoratum</i>	Sweet vernal-grass		Common.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Alopecurus pratensis</i>	Meadow foxtail		Frequent.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Pisum sativum</i>	Large white	2		Don Cotton, Elaine Cotton &	29/06/2000
<i>Pararge aegeria</i>	Speckled wood	c10		Don Cotton, Elaine Cotton &	29/06/2000
<i>Xanthorrhoe montanata</i>	Silver-ground carpet	1		Don Cotton, Elaine Cotton &	29/06/2000
<i>Haematopota pluvialis</i>	Common dog	4		Don Cotton	02/07/2000
<i>Coccyzus erythrophthalmus</i>	7-spot ladybird	1		Don Cotton	02/07/2000
<i>Falco tinnunculus</i>	Kestrel	1	Believed to be nesting in conifers near house.	Don Cotton	27/06/2000
<i>Columba palumbus</i>	Wood pigeon	1		Don Cotton, Elaine Cotton &	29/06/2000
<i>Troglodytes troglodytes</i>	Wren	1	Singing	Don Cotton, Elaine Cotton &	29/06/2000
<i>Erithacus rubecula</i>	Robin	1	Singing	Don Cotton, Elaine Cotton &	29/06/2000
<i>Turdus philomelos</i>	Song thrush		Family.	Don Cotton, Elaine Cotton &	29/06/2000
<i>Phylloscopus trochilus</i>	Willow warbler	1	Singing	Don Cotton, Elaine Cotton &	29/06/2000
<i>Regulus regulus</i>	Goldcrest	1	Singing	Don Cotton, Elaine Cotton &	29/06/2000

Cioghoge near Castlebaldwin

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<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>No.</u>	<u>NOTES</u>	<u>OBSERVER(S)</u>	<u>DATE</u>
Ranunculus aquatilis	Common water-crowfoot		Frequent.	Don Cotton & Martin Cotton	25/07/2000
Persicaria amphibia	Amphibious bistort		Common.	Don Cotton & Martin Cotton	25/07/2000
Rorippa palustris	Marsh yellow-cress		Occasional.	Don Cotton & Martin Cotton	25/07/2000
Potamogeton amplifolius	Silverweed		Common.	Don Cotton & Martin Cotton	25/07/2000
Isoplepis setacea	Bristle club-rush		Occasional.	Don Cotton & Martin Cotton	25/07/2000

