

**Table 1 Supplementary vantage point watch data for Cloncreen study area (winter 2012/13; breeding season 2013; breeding season 2014, winter 2014/15)**

Date	Survey	Weather Conditions	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration in Band 1 (0-10m)	Duration in Band 2 (10-25m)	Duration in Band 3 (25-175m)	Duration in Band 4 (175m+)	Notes
22.02.2013 (Non-breeding)	VP2: 1hrs starting at 10:00	Cloud Cover: 33-66%; Visibility: good; Precipitation: none; Wind Speed and Direction: gentle breeze W	Common Kestrel	1	10:06	180	60s	60s	60s		no specific habitat: male hunting along study area boundary
22.02.2013 (Non-breeding)	VP3: 1hrs starting at 11:20	Cloud Cover: 0-33%; Visibility: good; Precipitation: none; Wind Speed and Direction: gentle breeze W	Common Kestrel	1	11:48	60					no specific habitat: male hunting along study area boundary
22.02.2013 (Non-breeding)			Grey Heron	1							no specific habitat: flying over the study area
16.03.2013 (Both overlap)	VP2: 1hrs starting at 09:30	Cloud Cover: 0-33%; Visibility: good; Precipitation: none; Wind Speed and Direction: gentle breeze SW	Little Grebe	2							offsite quarry pond: swimming in pond in quarry
21.04.2013 (Breeding)	VP6: 2hrs starting at 08:15	Cloud Cover: 33-66%; Visibility: good; Precipitation: none; Wind Speed and Direction: moderate breeze SW	Golden Plover	15	08:54	60			60s		no specific habitat: likely late wintering or migrant birds, flying north
21.04.2013 (Breeding)	VP2: 1hrs starting at 14:15	Cloud Cover: 33-66%; Visibility: good; Precipitation: none; Wind Speed and Direction: moderate breeze SW	Mute Swan	2							fishing pond: breeding on Lough Aisling

Date	Survey	Weather Conditions	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration in Band 1 (0-10m)	Duration in Band 2 (10-25m)	Duration in Band 3 (25-175m)	Duration in Band 4 (175m+)	Notes
21.04.2013 [Breeding]	VP2: 1hrs starting at 14:15	Cloud Cover: 33-66%; Visibility: good; Precipitation: none; Wind Speed and Direction: moderate breeze SW	Little Grebe	2							offsite fishing pond: pair displaying on Lough Aisling
20.06.2013 [Breeding]	VP2: 2hrs starting at 07:15	Cloud Cover: 33-66%; Visibility: good; Precipitation: none; Wind Speed and Direction: moderate breeze SW	Common Buzzard	2	08:04	360		60s	300s		no specific habitat: pair circling. Breeding along northern boundary of the study area
25.07.2013 [Breeding]	VP2: 1.5hrs starting at 08:30	Cloud Cover: 66-100%; Visibility: good; Precipitation: none; Wind Speed and Direction: light breeze SW	Common Kestrel	1	09:43	120	40s	40s	40s		no specific habitat: hunting over the study area. May have bred locally
25.07.2013 [Breeding]	VP1: 2hrs starting at 10:30	Cloud Cover: 66-100%; Visibility: good; Precipitation: none; Wind Speed and Direction: light breeze SW	Common Buzzard	3	11:03						no specific habitat: flying within study area for 37mins
14.03.2014 [Both [overlap]]	VP1: 3hrs starting at 15:20	Cloud Cover: 33-66%; Visibility: good; Precipitation: none ; Wind Speed and Direction: gentle breeze NW	Golden Plover	50	15:55	300			150s	150s	no specific habitat: flying over the centre of the of south-east of study area, drifting slowly north
14.03.2014 [Both [overlap]]	VP1: 3hrs starting at 15:20	Cloud Cover: 33-66%; Visibility: good; Precipitation: none ; Wind Speed and Direction: gentle breeze NW	Common Kestrel	1	16:03						no specific habitat: flying along margin of study area for three mins

Date	Survey	Weather Conditions	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration in Band 1 (0-10m)	Duration in Band 2 (10-25m)	Duration in Band 3 (25-175m)	Duration in Band 4 (175m+)	Notes
14.03.2014 [Both overlap]]	VP1: 3hrs starting at 15:20	Cloud Cover: 33-66%; Visibility: good; Precipitation: none ; Wind Speed and Direction: gentle breeze NW	Woodcock	1							no specific habitat: displaying bird during March along western margin of study area. Probable breeder
19.03.2014 [Both overlap]]	VP4/5: 3hrs starting at 10:10	Cloud Cover: 33-66%; Visibility: good; Precipitation: none; Wind Speed and Direction: gentle breeze SW	Common Buzzard	2	11:06						no specific habitat: pair displaying for 11mins
19.03.2014 [Both overlap]]	VP4/5: 3hrs starting at 10:10	Cloud Cover: 33-66%; Visibility: good; Precipitation: none; Wind Speed and Direction: gentle breeze SW	Peregrine Falcon	1							no specific habitat: flying over eastern sector of study area
25.03.2014 [Both overlap]]	VP1: 3hrs starting at 07:00	Cloud Cover: 66-100%; Visibility: good; Precipitation: showers; Wind Speed and Direction: gentle breeze NE	Common Kestrel	1	07:50						no specific habitat: present in study area fro 20mins
25.03.2014 [Both overlap]]	VP2: 3hrs starting at 12:00	Cloud Cover: 33-66%; Visibility: good; Precipitation: showers; Wind Speed and Direction: gentle breeze NE	Peregrine Falcon	1							no specific habitat: flying over eastern sector of study area
30.03.2014 [Both overlap]]	VP4/5: 3hrs starting at 14:15	Cloud Cover: 0-33%; Visibility: good; Precipitation: none; Wind Speed and Direction: light air NE	Common Buzzard	1	14:56						no specific habitat: soaring for 7mins

Date	Survey	Weather Conditions	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration in Band 1 (0-10m)	Duration in Band 2 (10-25m)	Duration in Band 3 (25-175m)	Duration in Band 4 (175m+)	Notes
26.04.2014 [Breeding]	VP1: 2hrs starting at 07:45	Cloud Cover: 66-100%; Visibility: good; Precipitation: none; Wind Speed and Direction: gentle breeze SW	Northern Lapwing	3	07:55						no specific habitat: territorial birds within study area for 1hr and 40mins
03.05.2014 [Breeding]	VP6: 1hrs starting at 08:15	Cloud Cover: 66-100%; Visibility: moderate ; Precipitation: drizzle; Wind Speed and Direction: light breeze SE	Northern Lapwing	2							no specific habitat: territorial birds within study area
03.06.2014 [Breeding]	VP1: 1hrs starting at 07:00	Cloud Cover: 0-33%; Visibility: good; Precipitation: none; Wind Speed and Direction: light breeze SW	Northern Lapwing	3							no specific habitat: territorial birds within study area. At least one pair considered to have bred successfully
24.06.2014 [Breeding]	VP5: 2hrs starting at 08:15	Cloud Cover: 33-66%; Visibility: good ; Precipitation: none ; Wind Speed and Direction: gentle breeze W	Peregrine Falcon	2	09:06	60		30s	30s		no specific habitat: pair flew over south-east sector of study area
25.06.2014 [Breeding]	VP2: 2hrs starting at 07:45	Cloud Cover: 33-66%; Visibility: good ; Precipitation: none ; Wind Speed and Direction: light air SW	Peregrine Falcon	1	08:01	45			45s		no specific habitat: flew over north of study area
24.07.2014 [Breeding]	VP2: 2hrs starting at 07:45	Cloud Cover: 0-33%; Visibility: good ; Precipitation: none ; Wind Speed and Direction: light breeze SW	Common Kestrel	1	10:04	180	60s	60s	60s		no specific habitat: hunting within study area

Date	Survey	Weather Conditions	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration in Band 1 (0-10m)	Duration in Band 2 (10-25m)	Duration in Band 3 (25-175m)	Duration in Band 4 (175m+)	Notes
24.07.2014 (Breeding)	VP1: 2hrs starting at 16:00	Cloud Cover: 33-66%; Visibility: good ; Precipitation: none ; Wind Speed and Direction: gentle breeze S	Peregrine Falcon	2	17:01	90	30s	30s	30s		bare peat: adult and juvenile on the ground with prey item. Flew up later
21.02.2015 (Non-breeding)	VP1: 3hrs starting at 12:30	Cloud Cover: 66-100%; Visibility: moderate; Precipitation: showers; Wind Speed and Direction: gentle breeze SW	Common Snipe	5							wetland: flushed near VP1. At least two pairs. Displaying also observed
21.02.2015 (Non-breeding)	VP2: 3hrs starting at 12:30	Cloud Cover: 33-66%; Visibility: good; Precipitation: showers; Wind Speed and Direction: gentle breeze SW	Eurasian Sparrowhawk	1	14:05	20	20s				scrub: hunting over scrub at disused sand quarry
24.02.2015 (Non-breeding)	VP4/5: 3hrs starting at 09:30	Cloud Cover: 0-33%; Visibility: good; Precipitation: none; Wind Speed and Direction: gentle breeze W	Peregrine Falcon	2	09:54	120			120s		no specific habitat: pair along north boundary of study area, moving slowly northwards
24.02.2015 (Non-breeding)	VP1: 3hrs starting at 14:00	Cloud Cover: 0-33%; Visibility: good; Precipitation: none; Wind Speed and Direction: gentle breeze W	Common Kestrel	1	16:08	60	20s	20s	20s		bare peat: male hunting over cutaway bog
25.02.2015 (Non-breeding)	VP2: 3hrs starting at 08:45	Cloud Cover: 66-100%; Visibility: moderate; Precipitation: showers; Wind Speed and Direction: light breeze SW	Peregrine Falcon	1	09:14						brash: female perched on pile of stumps for seven mins - not seen leaving

Date	Survey	Weather Conditions	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration in Band 1 (0-10m)	Duration in Band 2 (10-25m)	Duration in Band 3 (25-175m)	Duration in Band 4 (175m+)	Notes
25.02.2015 (Non-breeding)	VP2: 3hrs starting at 08:45	Cloud Cover: 66-100%; Visibility: moderate; Precipitation: showers; Wind Speed and Direction: light breeze SW	Golden Plover	100	09:54	60				60s	no specific habitat: flew north-west across study area at approximately 200m high
25.02.2015 (Non-breeding)	VP2: 3hrs starting at 08:45	Cloud Cover: 66-100%; Visibility: moderate; Precipitation: showers; Wind Speed and Direction: light breeze SW	Common Buzzard	2	11:21	240			240s		trees: displaying over northern study area boundary and trees
25.02.2015 (Non-breeding)	VP2: 3hrs starting at 08:45	Cloud Cover: 66-100%; Visibility: moderate; Precipitation: showers; Wind Speed and Direction: light breeze SW	Common Kestrel	1	11:31	60	30s	30s			quarry: male flying over disused gravel pits (possibly same individual as previous day)
25.02.2015 (Non-breeding)	VP2: 3hrs starting at 08:45	Cloud Cover: 66-100%; Visibility: moderate; Precipitation: showers; Wind Speed and Direction: light breeze SW	Mute Swan	2							offsite: present in ponded area offsite
25.02.2015 (Non-breeding)	VP2: 3hrs starting at 08:45	Cloud Cover: 66-100%; Visibility: moderate; Precipitation: showers; Wind Speed and Direction: light breeze SW	Eurasian Teal	2							pond: pair on pond in disused gravel pit
25.02.2015 (Non-breeding)	VP4/5: 3hrs starting at 13:15	Cloud Cover: 33-66%; Visibility: good; Precipitation: showers; Wind Speed and Direction: gentle breeze SW	Common Buzzard	1	13:48	60	20s	20s	20s		no specific habitat: present flying over north-east of study area

**Table 2 Supplementary transect data for Cloncreen study area (winter 2012/13; breeding season 2013; breeding season 2014, winter 2014/15)**

Date	Season	Transect number	Species	No. of birds
23/04/2014	Breeding	1	Blackbird	3
23/04/2014	Breeding	2	Blackbird	4
23/04/2014	Breeding	3	Blackbird	1
23/04/2014	Breeding	4	Blackbird	3
23/04/2014	Breeding	5	Blackbird	1
25/03/2015	Both (overlap)	1	Blackbird	4
25/03/2015	Both (overlap)	2	Blackbird	6
25/03/2015	Both (overlap)	3	Blackbird	2
25/03/2015	Both (overlap)	4	Blackbird	4
23/04/2014	Breeding	1	Blackcap	1
23/04/2014	Breeding	3	Blackcap	1
23/04/2014	Breeding	1	Blue tit	3
23/04/2014	Breeding	4	Blue tit	1
25/03/2015	Both (overlap)	1	Blue tit	2
25/03/2015	Both (overlap)	3	Blue tit	2
25/03/2015	Both (overlap)	4	Blue tit	4
23/04/2014	Breeding	1	Bullfinch	1
23/04/2014	Breeding	3	Bullfinch	1
23/04/2014	Breeding	5	Bullfinch	1
25/03/2015	Both (overlap)	1	Bullfinch	1
23/04/2014	Breeding	5	Buzzard	2
23/04/2014	Breeding	1	Chaffinch	5
23/04/2014	Breeding	2	Chaffinch	3
23/04/2014	Breeding	3	Chaffinch	3
23/04/2014	Breeding	5	Chaffinch	2
25/03/2015	Both (overlap)	1	Chaffinch	3

Date	Season	Transect number	Species	No. of birds
25/03/2015	Both (overlap)	2	Chaffinch	2
25/03/2015	Both (overlap)	3	Chaffinch	1
25/03/2015	Both (overlap)	4	Chaffinch	2
25/03/2015	Both (overlap)	5	Chaffinch	1
23/04/2014	Breeding	1	Coal tit	2
23/04/2014	Breeding	3	Coal tit	1
25/03/2015	Both (overlap)	1	Coal tit	4
25/03/2015	Both (overlap)	3	Coal tit	1
25/03/2015	Both (overlap)	5	Coal tit	2
23/04/2014	Breeding	1	Dunnock	1
23/04/2014	Breeding	2	Dunnock	2
23/04/2014	Breeding	5	Dunnock	1
25/03/2015	Both (overlap)	2	Dunnock	2
23/04/2014	Breeding	1	Goldcrest	1
23/04/2014	Breeding	2	Goldcrest	2
23/04/2014	Breeding	4	Goldcrest	2
25/03/2015	Both (overlap)	2	Goldcrest	2
25/03/2015	Both (overlap)	3	Goldcrest	1
23/04/2014	Breeding	1	Goldfinch	3
23/04/2014	Breeding	4	Goldfinch	5
25/03/2015	Both (overlap)	1	Goldfinch	4
23/04/2014	Breeding	1	Great tit	1
23/04/2014	Breeding	2	Great tit	2
23/04/2014	Breeding	4	Great tit	1
25/03/2015	Both (overlap)	1	Great tit	1
25/03/2015	Both (overlap)	2	Great tit	1
23/04/2014	Breeding	1	Grey heron	1

Date	Season	Transect number	Species	No. of birds
25/03/2015	Both (overlap)	1	Grey Heron	1
25/03/2015	Both (overlap)	5	Grey Heron	1
23/04/2014	Breeding	1	Hooded crow	4
25/03/2015	Both (overlap)	1	Hooded crow	2
25/03/2015	Both (overlap)	5	Hooded crow	3
23/04/2014	Breeding	2	Jackdaw	1
25/03/2015	Both (overlap)	2	Jackdaw	4
23/04/2014	Breeding	1	Jay	1
25/03/2015	Both (overlap)	1	Jay	2
23/04/2014	Breeding	1	Kestrel	1
25/03/2015	Both (overlap)	4	Kestrel	1
23/04/2014	Breeding	1	Lapwing	3
25/03/2015	Both (overlap)	1	Lapwing	2
23/04/2014	Breeding	1	Lesser redpoll	6
23/04/2014	Breeding	4	Lesser redpoll	4
23/04/2014	Breeding	5	Lesser redpoll	2
25/03/2015	Both (overlap)	2	Lesser redpoll	8
25/03/2015	Both (overlap)	5	Lesser redpoll	2
23/04/2014	Breeding	3	Linnet	2
25/03/2015	Both (overlap)	3	Linnet	2
25/03/2015	Both (overlap)	2	Long-tailed tit	6
23/04/2014	Breeding	1	Magpie	2
23/04/2014	Breeding	3	Magpie	1
25/03/2015	Both (overlap)	1	Magpie	1
25/03/2015	Both (overlap)	3	Magpie	2
25/03/2015	Both (overlap)	5	Magpie	1
23/04/2014	Breeding	1	Mallard	3

Date	Season	Transect number	Species	No. of birds
23/04/2014	Breeding	2	Mallard	2
23/04/2014	Breeding	3	Mallard	2
25/03/2015	Both (overlap)	1	Mallard	4
25/03/2015	Both (overlap)	3	Mallard	1
23/04/2014	Breeding	1	Meadow pipit	8
23/04/2014	Breeding	2	Meadow pipit	5
23/04/2014	Breeding	3	Meadow pipit	2
23/04/2014	Breeding	4	Meadow pipit	7
23/04/2014	Breeding	5	Meadow pipit	6
25/03/2015	Both (overlap)	1	Meadow pipit	6
25/03/2015	Both (overlap)	2	Meadow pipit	7
25/03/2015	Both (overlap)	3	Meadow pipit	3
25/03/2015	Both (overlap)	4	Meadow pipit	5
25/03/2015	Both (overlap)	5	Meadow pipit	3
23/04/2014	Breeding	1	Mistle thrush	2
23/04/2014	Breeding	5	Mistle thrush	1
25/03/2015	Both (overlap)	1	Mistle thrush	4
25/03/2015	Both (overlap)	5	Mistle thrush	2
23/04/2014	Breeding	1	Moorhen	2
23/04/2014	Breeding	2	Moorhen	1
23/04/2014	Breeding	3	Moorhen	2
25/03/2015	Both (overlap)	1	Moorhen	2
25/03/2015	Both (overlap)	2	Moorhen	1
25/03/2015	Both (overlap)	3	Moorhen	1
25/03/2015	Both (overlap)	5	Moorhen	1
25/03/2015	Both (overlap)	1	Mute Swan	1
25/03/2015	Both (overlap)	5	Mute Swan	2

Date	Season	Transect number	Species	No. of birds
23/04/2014	Breeding	1	Pheasant	1
23/04/2014	Breeding	2	Pheasant	2
23/04/2014	Breeding	4	Pheasant	1
25/03/2015	Both (overlap)	1	Pheasant	2
25/03/2015	Both (overlap)	3	Pheasant	1
25/03/2015	Both (overlap)	4	Pheasant	1
25/03/2015	Both (overlap)	5	Pheasant	1
23/04/2014	Breeding	1	Pied wagtail	2
23/04/2014	Breeding	2	Pied wagtail	2
25/03/2015	Both (overlap)	1	Pied wagtail	3
25/03/2015	Both (overlap)	2	Pied wagtail	2
25/03/2015	Both (overlap)	3	Pied wagtail	1
25/03/2015	Both (overlap)	3	Raven	3
23/04/2014	Breeding	1	Reed bunting	2
23/04/2014	Breeding	5	Reed bunting	1
25/03/2015	Both (overlap)	3	Reed bunting	1
23/04/2014	Breeding	1	Ringed Plover	1
23/04/2014	Breeding	1	Robin	4
23/04/2014	Breeding	2	Robin	2
23/04/2014	Breeding	3	Robin	2
23/04/2014	Breeding	4	Robin	1
23/04/2014	Breeding	5	Robin	2
25/03/2015	Both (overlap)	1	Robin	2
25/03/2015	Both (overlap)	2	Robin	3
25/03/2015	Both (overlap)	3	Robin	2
25/03/2015	Both (overlap)	4	Robin	3
25/03/2015	Both (overlap)	5	Robin	3

Date	Season	Transect number	Species	No. of birds
23/04/2014	Breeding	3	Sand martin	20+
23/04/2014	Breeding	5	Sand martin	4
23/04/2014	Breeding	1	Sedge warbler	2
23/04/2014	Breeding	2	Sedge warbler	1
23/04/2014	Breeding	1	Skylark	5
23/04/2014	Breeding	2	Skylark	3
23/04/2014	Breeding	4	Skylark	4
23/04/2014	Breeding	5	Skylark	5
25/03/2015	Both (overlap)	1	Skylark	3
25/03/2015	Both (overlap)	2	Skylark	2
25/03/2015	Both (overlap)	3	Skylark	1
25/03/2015	Both (overlap)	4	Skylark	3
25/03/2015	Both (overlap)	5	Skylark	2
23/04/2014	Breeding	1	Snipe	1
25/03/2015	Both (overlap)	1	Snipe	2
25/03/2015	Both (overlap)	4	Snipe	1
25/03/2015	Both (overlap)	5	Snipe	6
23/04/2014	Breeding	1	Song thrush	2
23/04/2014	Breeding	2	Song thrush	1
23/04/2014	Breeding	4	Song thrush	1
25/03/2015	Both (overlap)	1	Song thrush	2
25/03/2015	Both (overlap)	2	Song thrush	2
25/03/2015	Both (overlap)	3	Song thrush	1
23/04/2014	Breeding	1	Sparrowhawk	2
23/04/2014	Breeding	3	Sparrowhawk	1
25/03/2015	Both (overlap)	1	Sparrowhawk	1
25/03/2015	Both (overlap)	4	Sparrowhawk	1

Date	Season	Transect number	Species	No. of birds
23/04/2014	Breeding	1	Stonechat	1
23/04/2014	Breeding	3	Stonechat	2
25/03/2015	Both (overlap)	1	Stonechat	2
25/03/2015	Both (overlap)	3	Stonechat	2
25/03/2015	Both (overlap)	5	Stonechat	3
23/04/2014	Breeding	1	Swallow	3
23/04/2014	Breeding	3	Swallow	4
23/04/2014	Breeding	4	Swallow	5
23/04/2014	Breeding	5	Swallow	1
23/04/2014	Breeding	3	Wheatear	1
25/03/2015	Both (overlap)	3	Wheatear	1
23/04/2014	Breeding	1	Willow warbler	2
23/04/2014	Breeding	2	Willow warbler	3
23/04/2014	Breeding	3	Willow warbler	2
23/04/2014	Breeding	4	Willow warbler	3
23/04/2014	Breeding	5	Willow warbler	2
23/04/2014	Breeding	1	Woodpigeon	7
23/04/2014	Breeding	2	Woodpigeon	4
23/04/2014	Breeding	3	Woodpigeon	2
23/04/2014	Breeding	4	Woodpigeon	3
25/03/2015	Both (overlap)	1	Woodpigeon	3
25/03/2015	Both (overlap)	2	Woodpigeon	2
25/03/2015	Both (overlap)	5	Woodpigeon	4
23/04/2014	Breeding	1	Wren	6
23/04/2014	Breeding	2	Wren	5
23/04/2014	Breeding	3	Wren	2
23/04/2014	Breeding	4	Wren	3

Date	Season	Transect number	Species	No. of birds
23/04/2014	Breeding	5	Wren	2
25/03/2015	Both (overlap)	1	Wren	3
25/03/2015	Both (overlap)	2	Wren	4
25/03/2015	Both (overlap)	3	Wren	1
25/03/2015	Both (overlap)	4	Wren	2

**Table 1 Bird survey effort at Cloncreen – winter 2013/14 & 2015/16 and summer 2015 & 2016**

Date	Season	Survey Method	VP/ transect/ area number	Survey Duration	Weather Conditions	Comments	Surveyor
02/10/2013	Non-Breeding	vantage point survey	2	3hrs starting at 14:40	wind speed and direction: gentle breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		G0
03/10/2013	Non-Breeding	vantage point survey	4&5	3hrs starting at 08:00	wind speed and direction: gentle breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		G0
08/10/2013	Non-Breeding	vantage point survey	1	3hrs starting at 13:05	wind speed and direction: light breeze W; visibility: good (>2km); rain: none; frost: none; snow: none		G0
13/10/2013	Non-Breeding	vantage point survey	2	3hrs starting at 08:40	wind speed and direction: light air NE; visibility: good (>2km); rain: none; frost: none; snow: none		G0
13/10/2013	Non-Breeding	vantage point survey	1	3hrs starting at 09:45	wind speed and direction: light air NE; visibility: good (>2km); rain: none; frost: none; snow: none		G0
14/10/2013	Non-Breeding	vantage point survey	4&5	3hrs starting at 08:45	wind speed and direction: light breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		G0
07/11/2013	Non-Breeding	vantage point survey	1	3hrs starting at 09:25	wind speed and direction: light breeze NW; visibility: good (>2km); rain: none; frost: none; snow: none		G0
07/11/2013	Non-Breeding	vantage point survey	2	3hrs starting at 13:45	wind speed and direction: light breeze NW; visibility: good (>2km); rain: none; frost: none; snow: none		G0
12/11/2013	Non-Breeding	vantage point survey	4&5	3hrs starting at 08:30	wind speed and direction: light breeze NW; visibility: good (>2km); rain: none; frost: none; snow: none		G0
13/11/2013	Non-Breeding	vantage point survey	4&5	3hrs starting at 07:30	wind speed and direction: gentle breeze NW; visibility: good (>2km); rain: none; frost: none; snow: none		G0
16/11/2013	Non-Breeding	vantage point survey	1	3hrs starting at 08:00	wind speed and direction: light air S; visibility: good (>2km); rain: none; frost: none; snow: none		G0

Date	Season	Survey Method	VP/ transect/ area number	Survey Duration	Weather Conditions	Comments	Surveyor
16/11/2013	Non-Breeding	vantage point survey	2	4hrs starting at 13:00	wind speed and direction: light breeze S; visibility: good (>2km); rain: none; frost: none; snow: none		G0
05/12/2013	Non-Breeding	vantage point survey	1	3hrs starting at 09:20	wind speed and direction: moderate breeze NW; visibility: good (>2km); rain: none; frost: none; snow: none		G0
06/12/2013	Non-Breeding	vantage point survey	2	3hrs starting at 13:55	wind speed and direction: light breeze NW; visibility: good (>2km); rain: none; frost: none; snow: none		G0
08/12/2013	Non-Breeding	vantage point survey	4&5	3hrs starting at 13:00	wind speed and direction: gentle breeze S; visibility: good (>2km); rain: none; frost: none; snow: none		G0
16/12/2013	Non-Breeding	vantage point survey	2	3hrs starting at 09:25	wind speed and direction: light breeze N; visibility: good (>2km); rain: none; frost: none; snow: none		G0
16/12/2013	Non-Breeding	vantage point survey	1	3hrs starting at 14:00	wind speed and direction: light breeze N; visibility: good (>2km); rain: light showers; frost: none; snow: none		G0
17/12/2013	Non-Breeding	vantage point survey	1	1hr 30mins starting at 08:00	wind speed and direction: light breeze N; visibility: good (>2km); rain: none; frost: none; snow: none		G0
17/12/2013	Non-Breeding	vantage point survey	4&5	3hrs starting at 10:00	wind speed and direction: gentle breeze N; visibility: good (>2km); rain: none; frost: none; snow: none		G0
05/01/2014	Non-Breeding	vantage point survey	1	3hrs starting at 14:15	wind speed and direction: moderate breeze SW; visibility: good (>2km); rain: light showers; frost: none; snow: none		G0
09/01/2014	Non-Breeding	vantage point survey	2	3hrs starting at 09:30	wind speed and direction: gentle breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		G0

Date	Season	Survey Method	VP/ transect/ area number	Survey Duration	Weather Conditions	Comments	Surveyor
09/01/2014	Non-Breeding	vantage point survey	4&5	2hrs 30mins starting at 13:30	wind speed and direction: gentle breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		GO
12/01/2014	Non-Breeding	vantage point survey	2	3hrs starting at 14:00	wind speed and direction: moderate breeze SE; visibility: moderate (1-2km); rain: drizzle/mist; frost: none; snow: none		GO
14/01/2014	Non-Breeding	vantage point survey	4&5	3hrs starting at 08:30	wind speed and direction: light breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		GO
16/01/2014	Non-Breeding	vantage point survey	1	3hrs starting at 08:00	wind speed and direction: light breeze S; visibility: good (>2km); rain: none; frost: none; snow: none		GO
02/02/2014	Non-Breeding	vantage point survey	1	3hrs starting at 08:20	wind speed and direction: light breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		GO
04/02/2014	Non-Breeding	vantage point survey	2	3hrs starting at 08:00	wind speed and direction: light breeze SE; visibility: good (>2km); rain: none; frost: none; snow: none		GO
13/02/2014	Non-Breeding	vantage point survey	4&5	3hrs starting at 14:55	wind speed and direction: moderate breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		GO
15/02/2014	Non-Breeding	vantage point survey	1	3hrs starting at 09:35	wind speed and direction: moderate breeze N; visibility: good (>2km); rain: none; frost: none; snow: none		GO
18/02/2014	Non-Breeding	vantage point survey	1	1hrs starting at 13:20	wind speed and direction: gentle breeze NW; visibility: good (>2km); rain: none; frost: none; snow: none		GO
18/02/2014	Non-Breeding	vantage point survey	1	2hrs 40mins starting at 15:50	wind speed and direction: light breeze NW; visibility: good (>2km); rain: light showers; frost: none; snow: none		GO
24/02/2014	Non-Breeding	vantage point survey	4&5	3hrs starting at 15:30	wind speed and direction: gentle breeze NW; visibility: good (>2km); rain: none; frost: none; snow: none		GO

Date	Season	Survey Method	VP/ transect/ area number	Survey Duration	Weather Conditions	Comments	Surveyor
27/02/2014	Non-Breeding	vantage point survey	2	3hrs starting at 07:00	wind speed and direction: light breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		GO
14/03/2014	Both (Overlap)	vantage point survey	1	3hrs starting at 15:20	wind speed and direction: gentle breeze NW; visibility: good (>2km); rain: none; frost: none; snow: none		GO
18/03/2014	Both (Overlap)	vantage point survey	2	3hrs starting at 11:10	wind speed and direction: moderate breeze NW; visibility: good (>2km); rain: none; frost: none; snow: none		GO
19/03/2014	Both (Overlap)	vantage point survey	4&5	3hrs starting at 10:10	wind speed and direction: gentle breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		GO
25/03/2014	Both (Overlap)	vantage point survey	1	3hrs starting at 07:00	wind speed and direction: gentle breeze NE; visibility: good (>2km); rain: light showers; frost: none; snow: none		GO
25/03/2014	Both (Overlap)	vantage point survey	2	3hrs starting at 12:00	wind speed and direction: gentle breeze NE; visibility: good (>2km); rain: light showers; frost: none; snow: none		GO
30/03/2014	Both (Overlap)	vantage point survey	4&5	2hrs starting at 14:15	wind speed and direction: light air NE; visibility: good (>2km); rain: none; frost: none; snow: none		GO
23/03/2015	Both (Overlap)	vantage point survey	1	3hrs starting at 08:00	wind speed and direction: gentle breeze W; visibility: good (>2km); rain: none; frost: none; snow: none		BM
23/03/2015	Both (Overlap)	vantage point survey	2	3hrs starting at 12:30	wind speed and direction: light breeze W; visibility: good (>2km); rain: none; frost: none; snow: none		BM
24/03/2015	Both (Overlap)	vantage point survey	4&5	3hrs starting at 09:30	wind speed and direction: moderate breeze SW; visibility: good (>2km); rain: light showers; frost: none; snow: none		BM

Date	Season	Survey Method	VP/ transect/ area number	Survey Duration	Weather Conditions	Comments	Surveyor
24/03/2015	Both (Overlap)	vantage point survey	1	3hrs starting at 14:30	wind speed and direction: gentle breeze W; visibility: good (>2km); rain: light showers; frost: none; snow: none		BM
27/03/2015	Both (Overlap)	vantage point survey	2	3hrs starting at 14:30	wind speed and direction: light breeze SW; visibility: good (>2km); rain: light showers; frost: none; snow: none		JL
27/03/2015	Both (Overlap)	vantage point survey	4&5	3hrs starting at 12:15	wind speed and direction: light air S; visibility: good (>2km); rain: none; frost: none; snow: none		JL
13/04/2015	Breeding	vantage point survey	2	3hrs starting at 07:15	wind speed and direction: light breeze SE; visibility: good (>2km); rain: none; frost: none; snow: none		BM
13/04/2015	Breeding	vantage point survey	1	2hrs starting at 15:00	wind speed and direction: light air SE; visibility: good (>2km); rain: none; frost: none; snow: none		BM
14/04/2015	Breeding	vantage point survey	4&5	3hrs starting at 07:00	wind speed and direction: light breeze S; visibility: good (>2km); rain: none; frost: none; snow: none		SON
14/04/2015	Breeding	vantage point survey	6	3hrs starting at 11:30	wind speed and direction: light breeze S; visibility: good (>2km); rain: none; frost: none; snow: none		SON
15/04/2015	Breeding	vantage point survey	1	3hrs starting at 07:10	wind speed and direction: light air SW; visibility: good (>2km); rain: none; frost: none; snow: none		BM
15/04/2015	Breeding	vantage point survey	6	3hrs starting at 16:00	wind speed and direction: light breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		BM
16/04/2015	Breeding	vantage point survey	2	3hrs starting at 08:45	wind speed and direction: light breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		SON

Date	Season	Survey Method	VP/ transect/ area number	Survey Duration	Weather Conditions	Comments	Surveyor
16/04/2015	Breeding	vantage point survey	4&5	3hrs starting at 13:00	wind speed and direction: gentle breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		SON
14/05/2015	Breeding	vantage point survey	1	3hrs starting at 07:00	wind speed and direction: light air W; visibility: good (>2km); rain: none; frost: none; snow: none		BM
14/05/2015	Breeding	vantage point survey	2	3hrs starting at 15:30	wind speed and direction: light breeze W; visibility: good (>2km); rain: none; frost: none; snow: none		BM
15/05/2015	Breeding	vantage point survey	6	3hrs starting at 07:45	wind speed and direction: gentle breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		BM
15/05/2015	Breeding	vantage point survey	4&5	3hrs starting at 12:00	wind speed and direction: light breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		BM
18/05/2015	Breeding	vantage point survey	2	3hrs starting at 08:45	wind speed and direction: gentle breeze SW; visibility: good (>2km); rain: light showers; frost: none; snow: none		SON
18/05/2015	Breeding	vantage point survey	1	3hrs starting at 13:15	wind speed and direction: light breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		SON
19/05/2015	Breeding	vantage point survey	6	3hrs starting at 07:30	wind speed and direction: light breeze S; visibility: good (>2km); rain: none; frost: none; snow: none		SON
19/05/2015	Breeding	vantage point survey	4&5	3hrs starting at 11:30	wind speed and direction: gentle breeze S; visibility: good (>2km); rain: none; frost: none; snow: none		SON
04/06/2015	Breeding	vantage point survey	1	3hrs starting at 08:00	wind speed and direction: light breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		BM
04/06/2015	Breeding	vantage point survey	2	3hrs starting at 15:00	wind speed and direction: gentle breeze W; visibility: good (>2km); rain: none; frost: none; snow: none		BM

Date	Season	Survey Method	VP/ transect/ area number	Survey Duration	Weather Conditions	Comments	Surveyor
10/06/2015	Breeding	vantage point survey	1	3hrs starting at 08:15	wind speed and direction: gentle breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		BM
10/06/2015	Breeding	vantage point survey	6	3hrs starting at 13:00	wind speed and direction: light breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		BM
11/06/2015	Breeding	vantage point survey	4&5	3hrs starting at 09:30	wind speed and direction: light breeze W; visibility: good (>2km); rain: none; frost: none; snow: none		SON
11/06/2015	Breeding	vantage point survey	2	3hrs starting at 15:00	wind speed and direction: gentle breeze W; visibility: good (>2km); rain: none; frost: none; snow: none		SON
29/06/2015	Breeding	vantage point survey	4&5	3hrs starting at 07:15	wind speed and direction: light air E; visibility: good (>2km); rain: none; frost: none; snow: none		SON
29/06/2015	Breeding	vantage point survey	6	3hrs starting at 11:45	wind speed and direction: light breeze SE; visibility: good (>2km); rain: none; frost: none; snow: none		SON
13/07/2015	Breeding	vantage point survey	1	3hrs starting at 08:20	wind speed and direction: light breeze W; visibility: good (>2km); rain: light showers; frost: none; snow: none		BM
13/07/2015	Breeding	vantage point survey	4&5	3hrs starting at 14:30	wind speed and direction: light air W; visibility: good (>2km); rain: none; frost: none; snow: none		BM
14/07/2015	Breeding	vantage point survey	2	3hrs starting at 07:30	wind speed and direction: light breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		SON
14/07/2015	Breeding	vantage point survey	6	3hrs starting at 14:30	wind speed and direction: light breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		SON
23/07/2015	Breeding	vantage point survey	1	3hrs starting at 10:15	wind speed and direction: light air S; visibility: moderate (1-2km); rain: drizzle/mist; frost: none; snow: none		SON

Date	Season	Survey Method	VP/ transect/ area number	Survey Duration	Weather Conditions	Comments	Surveyor
23/07/2015	Breeding	vantage point survey	2	3hrs starting at 14:30	wind speed and direction: gentle breeze S; visibility: good (>2km); rain: none; frost: none; snow: none		SON
24/07/2015	Breeding	vantage point survey	4&5	3hrs starting at 07:45	wind speed and direction: light breeze SE; visibility: good (>2km); rain: none; frost: none; snow: none		SON
24/07/2015	Breeding	vantage point survey	6	3hrs starting at 11:45	wind speed and direction: gentle breeze SE; visibility: good (>2km); rain: none; frost: none; snow: none		SON
10/08/2015	Breeding	vantage point survey	2	3hrs starting at 09:15	wind speed and direction: light breeze W; visibility: good (>2km); rain: none; frost: none; snow: none		BM
10/08/2015	Breeding	vantage point survey	1	3hrs starting at 14:30	wind speed and direction: light breeze W; visibility: good (>2km); rain: none; frost: none; snow: none		BM
11/08/2015	Breeding	vantage point survey	6	3hrs starting at 07:45	wind speed and direction: gentle breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		BM
11/08/2015	Breeding	vantage point survey	4&5	3hrs starting at 15:30	wind speed and direction: light breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		BM
20/08/2015	Breeding	vantage point survey	1	3hrs starting at 09:30	wind speed and direction: gentle breeze W; visibility: good (>2km); rain: none; frost: none; snow: none		BM
20/08/2015	Breeding	vantage point survey	2	3hrs starting at 14:45	wind speed and direction: moderate breeze W; visibility: good (>2km); rain: none; frost: none; snow: none		BM
21/08/2015	Breeding	vantage point survey	6	3hrs starting at 07:10	wind speed and direction: light breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		BM
21/08/2015	Breeding	vantage point survey	4&5	3hrs starting at 11:30	wind speed and direction: light breeze SW; visibility: good (>2km); rain: none; frost: none; snow: none		BM

Date	Season	Survey Method	VP/ transect/ area number	Survey Duration	Weather Conditions	Comments	Surveyor
30/09/2015	Both (Overlap)	vantage point survey	2	3hrs starting at 16:45	wind speed and direction: fresh breeze NE; cloud cover and height: 0-33%, 150-500m high; visibility: good (>2km); rain: none; frost: none; snow: none		AD
30/09/2015	Both (Overlap)	vantage point survey	1	3hrs starting at 16:50	wind speed and direction: light air NE; cloud cover and height: 33-66%, 150-500m high; visibility: good (>2km); rain: none; frost: none; snow: none		TN
02/10/2015	Non-Breeding	vantage point survey	4&5	3hrs starting at 16:35	wind speed and direction: gentle breeze NE; cloud cover and height: 66-100%, <150m high; visibility: good (>2km); rain: none; frost: none; snow: none		AD
04/10/2015	Non-Breeding	vantage point survey	2	3hrs starting at 06:55	wind speed and direction: light breeze SE; cloud cover and height: 66-100%, <150m high; visibility: good (>2km); rain: none; frost: none; snow: none		AD
05/10/2015	Non-Breeding	vantage point survey	1	3hrs starting at 07:05	wind speed and direction: fresh breeze E; cloud cover and height: 66-100%, 150-500m high; visibility: good (>2km); rain: none; frost: none; snow: none		AD
06/10/2015	Non-Breeding	vantage point survey	4&5	3hrs starting at 07:05	wind speed and direction: light breeze W; cloud cover and height: 66-100%, >500m high; visibility: moderate (1-2km); rain: none; frost: none; snow: none		AD
20/10/2015	Non-Breeding	vantage point survey	1	3hrs starting at 12:02	wind speed and direction: light breeze SE; cloud cover and height: 66-100%, 150-500m high; visibility: good (>2km); rain: none; frost: none; snow: none		SD
20/10/2015	Non-Breeding	vantage point survey	1	3hrs starting at 15:18	wind speed and direction: light air SE; cloud cover and height: 66-100%, 150-500m high; visibility: moderate (1-2km); rain: drizzle/mist; frost: none; snow: none		SD

Date	Season	Survey Method	VP/ transect/ area number	Survey Duration	Weather Conditions	Comments	Surveyor
21/10/2015	Non-Breeding	vantage point survey	2	3hrs starting at 07:50	wind speed and direction: moderate breeze W; cloud cover and height: 66-100%, <150m high; visibility: moderate (1-2km); rain: light showers; frost: none; snow: none		SD
21/10/2015	Non-Breeding	vantage point survey	2	3hrs starting at 11:30	wind speed and direction: moderate breeze W; cloud cover and height: 66-100%, 150-500m high; visibility: moderate (1-2km); rain: light showers; frost: none; snow: none		SD
22/10/2015	Non-Breeding	vantage point survey	4&5	3hrs starting at 12:00	wind speed and direction: strong breeze NE; cloud cover and height: 66-100%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		SD
22/10/2015	Non-Breeding	vantage point survey	4&5	3hrs starting at 15:15	wind speed and direction: moderate breeze E; cloud cover and height: 66-100%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		SD
26/11/2015	Non-Breeding	vantage point survey	4&5	3hrs starting at 08:30	wind speed and direction: fresh breeze W; cloud cover and height: 66-100%, 150-500m high; visibility: moderate (1-2km); rain: drizzle/mist; frost: none; snow: none		SD
26/11/2015	Non-Breeding	vantage point survey	4&5	3hrs starting at 11:45	wind speed and direction: fresh breeze W; cloud cover and height: 66-100%, <150m high; visibility: moderate (1-2km); rain: light showers; frost: none; snow: none		SD
30/11/2015	Non-Breeding	vantage point survey	2	3hrs starting at 08:30	wind speed and direction: strong breeze N; cloud cover and height: 66-100%, 150-500m high; visibility: moderate (1-2km); rain: heavy rain; frost: none; snow: none		BOL
30/11/2015	Non-Breeding	vantage point survey	2	3hrs starting at 13:49	wind speed and direction: moderate breeze N; cloud cover and height: 66-100%, 150-500m high; visibility: moderate (1-2km); rain: drizzle/mist; frost: none; snow: none		BOL

Date	Season	Survey Method	VP/ transect/ area number	Survey Duration	Weather Conditions	Comments	Surveyor
01/12/2015	Non-Breeding	vantage point survey	1	3hrs starting at 08:00	wind speed and direction: moderate breeze SW; cloud cover and height: 66-100%, 150-500m high; visibility: good (>2km); rain: none; frost: none; snow: none		SD
01/12/2015	Non-Breeding	vantage point survey	1	3hrs starting at 11:30	wind speed and direction: gentle breeze S; cloud cover and height: 66-100%, 150-500m high; visibility: good (>2km); rain: drizzle/mist; frost: none; snow: none		SD
16/12/2015	Non-Breeding	vantage point survey	4&5	3hrs starting at 10:00	wind speed and direction: fresh breeze S; cloud cover and height: 66-100%, 150-500m high; visibility: good (>2km); rain: none; frost: none; snow: none		SD
16/12/2015	Non-Breeding	vantage point survey	4&5	3hrs starting at 13:15	wind speed and direction: strong breeze S; cloud cover and height: 66-100%, 150-500m high; visibility: good (>2km); rain: none; frost: none; snow: none		SD
17/12/2015	Non-Breeding	vantage point survey	2	3hrs starting at 08:25	wind speed and direction: moderate breeze SW; cloud cover and height: 66-100%, 150-500m high; visibility: good (>2km); rain: none; frost: none; snow: none		SD
17/12/2015	Non-Breeding	vantage point survey	2	3hrs starting at 11:40	wind speed and direction: gentle breeze SW; cloud cover and height: 66-100%, 150-500m high; visibility: good (>2km); rain: none; frost: none; snow: none		SD
21/12/2015	Non-Breeding	vantage point survey	1	3hrs starting at 10:15	wind speed and direction: strong breeze E; cloud cover and height: 0-33%, 150-500m high; visibility: good (>2km); rain: none; frost: none; snow: none		SD
21/12/2015	Non-Breeding	vantage point survey	1	3hrs starting at 13:30	wind speed and direction: fresh breeze E; cloud cover and height: 0-33%, 150-500m high; visibility: good (>2km); rain: none; frost: none; snow: none		SD

Date	Season	Survey Method	VP/ transect/ area number	Survey Duration	Weather Conditions	Comments	Surveyor
27/01/2016	Non-Breeding	vantage point survey	1	3hrs starting at 08:15	wind speed and direction: gentle breeze W; cloud cover and height: 66-100%, 150-500m high; visibility: good (>2km); rain: light showers; frost: none; snow: none		SD
27/01/2016	Non-Breeding	vantage point survey	1	3hrs starting at 11:30	wind speed and direction: gentle breeze W; cloud cover and height: 66-100%, 150-500m high; visibility: good (>2km); rain: drizzle/mist; frost: none; snow: none		SD
28/01/2016	Non-Breeding	vantage point survey	2	3hrs starting at 11:00	wind speed and direction: strong breeze SW; cloud cover and height: 66-100%, 150-500m high; visibility: moderate (1-2km); rain: none; frost: none; snow: none		SD
28/01/2016	Non-Breeding	vantage point survey	2	2hrs 50mins starting at 14:05	wind speed and direction: strong breeze SW; cloud cover and height: 66-100%, <150m high; visibility: moderate (1-2km); rain: heavy showers; frost: none; snow: none	break from 1455 to 1505 due to heavy rain	SD
28/01/2016	Non-Breeding	vantage point survey	4&5	3hrs starting at 11:25	wind speed and direction: moderate breeze SW; cloud cover and height: 66-100%, 150-500m high; visibility: moderate (1-2km); rain: heavy showers; frost: none; snow: none		BOL
28/01/2016	Non-Breeding	vantage point survey	4&5	3hrs starting at 14:20	wind speed and direction: moderate breeze SW; cloud cover and height: 66-100%, <150m high; visibility: moderate (1-2km); rain: heavy showers; frost: none; snow: none		BOL
24/02/2016	Non-Breeding	vantage point survey	1	3hrs starting at 11:50	wind speed and direction: light breeze SW; cloud cover and height: 0-33%, >500m high; visibility: good (>2km); rain: none; frost: all day; snow: none		BOL
24/02/2016	Non-Breeding	vantage point survey	1	3hrs starting at 15:10	wind speed and direction: light breeze SW; cloud cover and height: 33-66%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		BOL

Date	Season	Survey Method	VP/ transect/ area number	Survey Duration	Weather Conditions	Comments	Surveyor
25/02/2016	Non-Breeding	vantage point survey	4&5	3hrs starting at 07:29	wind speed and direction: light air SW; cloud cover and height: 66-100%, 150-500m high; visibility: good (>2km); rain: none; frost: all day; snow: none		BOL
25/02/2016	Non-Breeding	vantage point survey	4&5	3hrs starting at 10:52	wind speed and direction: light air SW; cloud cover and height: 66-100%, 150-500m high; visibility: good (>2km); rain: none; frost: ground; snow: none		BOL
25/02/2016	Non-Breeding	vantage point survey	2	3hrs starting at 07:35	wind speed and direction: light breeze SW; cloud cover and height: 66-100%, 150-500m high; visibility: moderate (1-2km); rain: none; frost: all day; snow: on site		SD
25/02/2016	Non-Breeding	vantage point survey	2	3hrs starting at 10:50	wind speed and direction: light breeze SW; cloud cover and height: 66-100%, 150-500m high; visibility: moderate (1-2km); rain: none; frost: ground; snow: none		SD
29/03/2016	Both (Overlap)	vantage point survey	1	3hrs starting at 07:05	wind speed and direction: gentle breeze SW; cloud cover and height: 0-33%, >500m high; visibility: moderate (1-2km); rain: none; frost: none; snow: none		SD
29/03/2016	Both (Overlap)	vantage point survey	1	3hrs starting at 10:30	wind speed and direction: gentle breeze SW; cloud cover and height: 33-66%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		SD
30/03/2016	Both (Overlap)	vantage point survey	2	3hrs starting at 13:10	wind speed and direction: light breeze W; cloud cover and height: 33-66%, 150-500m high; visibility: good (>2km); rain: light showers; frost: none; snow: none		BOL
30/03/2016	Both (Overlap)	vantage point survey	2	3hrs starting at 16:25	wind speed and direction: light air W; cloud cover and height: 0-33%, 150-500m high; visibility: good (>2km); rain: light showers; frost: none; snow: none		BOL

Date	Season	Survey Method	VP/ transect/ area number	Survey Duration	Weather Conditions	Comments	Surveyor
30/03/2016	Both (Overlap)	vantage point survey	4&5	3hrs starting at 13:00	wind speed and direction: fresh breeze W; cloud cover and height: 0-33%, 150-500m high; visibility: good (>2km); rain: light showers; frost: none; snow: none		SD
30/03/2016	Both (Overlap)	vantage point survey	4&5	3hrs starting at 16:15	wind speed and direction: light breeze W; cloud cover and height: 0-33%, 150-500m high; visibility: good (>2km); rain: light showers; frost: none; snow: none		SD
27/04/2016	Breeding	vantage point survey	2	3hrs starting at 04:50	wind speed and direction: light air W; cloud cover and height: 0-33%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		DF
27/04/2016	Breeding	vantage point survey	2	3hrs starting at 08:33	wind speed and direction: light air W; cloud cover and height: 33-66%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		DF
28/04/2016	Breeding	vantage point survey	1	3hrs starting at 15:04	wind speed and direction: moderate breeze W; cloud cover and height: 66-100%, 150-500m high; visibility: good (>2km); rain: none; frost: none; snow: none		DF
28/04/2016	Breeding	vantage point survey	1	3hrs starting at 18:45	wind speed and direction: moderate breeze W; cloud cover and height: 66-100%, 150-500m high; visibility: good (>2km); rain: light showers; frost: none; snow: none		DF
29/04/2016	Breeding	vantage point survey	4&5	3hrs starting at 04:50	wind speed and direction: moderate breeze W; cloud cover and height: 66-100%, >500m high; visibility: good (>2km); rain: light showers; frost: none; snow: none		DF
29/04/2016	Breeding	vantage point survey	4&5	3hrs starting at 08:20	wind speed and direction: light breeze W; cloud cover and height: 66-100%, 150-500m high; visibility: good (>2km); rain: none; frost: none; snow: none		DF

Date	Season	Survey Method	VP/ transect/ area number	Survey Duration	Weather Conditions	Comments	Surveyor
22/05/2016	Breeding	vantage point survey	1	3hrs starting at 16:00	wind speed and direction: light breeze W; cloud cover and height: 0-33%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		CG
22/05/2016	Breeding	vantage point survey	1	3hrs starting at 19:30	wind speed and direction: light breeze W; cloud cover and height: 0-33%, >500m high; visibility: good (>2km); rain: light showers; frost: none; snow: none		CG
23/05/2016	Breeding	vantage point survey	2	3hrs starting at 04:25	wind speed and direction: light breeze NW; cloud cover and height: 0-33%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		CG
23/05/2016	Breeding	vantage point survey	2	3hrs starting at 07:55	wind speed and direction: light breeze NW; cloud cover and height: 0-33%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		CG
24/05/2016	Breeding	vantage point survey	4&5	3hrs starting at 16:00	wind speed and direction: light breeze E; cloud cover and height: 0-33%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		CG
24/05/2016	Breeding	vantage point survey	4&5	3hrs starting at 19:30	wind speed and direction: light breeze E; cloud cover and height: 0-33%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		CG
13/06/2016	Breeding	vantage point survey	1	3hrs starting at 15:30	wind speed and direction: light air SW; cloud cover and height: 66-100%, 150-500m high; visibility: good (>2km); rain: none; frost: none; snow: none		CG
13/06/2016	Breeding	vantage point survey	1	3hrs starting at 19:00	wind speed and direction: light air SW; cloud cover and height: 66-100%, 150-500m high; visibility: good (>2km); rain: none; frost: none; snow: none		CG

Date	Season	Survey Method	VP/ transect/ area number	Survey Duration	Weather Conditions	Comments	Surveyor
14/06/2016	Breeding	vantage point survey	2	3hrs starting at 15:30	wind speed and direction: light air NE; cloud cover and height: 66-100%, 150-500m high; visibility: moderate (1-2km); rain: light showers; frost: none; snow: none		CG
14/06/2016	Breeding	vantage point survey	2	3hrs starting at 18:59	wind speed and direction: light air NE; cloud cover and height: 66-100%, 150-500m high; visibility: good (>2km); rain: none; frost: none; snow: none		CG
15/06/2016	Breeding	vantage point survey	4&5	3hrs starting at 06:30	wind speed and direction: light breeze NW; cloud cover and height: 66-100%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		CG
15/06/2016	Breeding	vantage point survey	4&5	3hrs starting at 10:00	wind speed and direction: light breeze NW; cloud cover and height: 33-66%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		CG
08/07/2016	Breeding	vantage point survey	1	3hrs starting at 09:00	wind speed and direction: moderate breeze NW; cloud cover and height: 33-66%, >500m high; visibility: good (>2km); rain none; frost: none; snow: none		CG
08/07/2016	Breeding	vantage point survey	1	3hrs starting at 12:30	wind speed and direction: gentle breeze NW; cloud cover and height: 66-100, >500m high; visibility: good (>2km); rain none; frost: none; snow: none		CG
11/07/2016	Breeding	vantage point survey	3 (4/5)	3hrs starting at 12:00	wind speed and direction: moderate breeze W; cloud cover and height: 33-66, 150-500m high; visibility: good (>2km); rain none; frost: none; snow: none		CG
11/07/2016	Breeding	vantage point survey	3 (4/5)	3hrs starting at 15:30	wind speed and direction: moderate breeze W; cloud cover and height: 33-66, >500m high; visibility: good (>2km); rain none; frost: none; snow: none		CG

Date	Season	Survey Method	VP/ transect/ area number	Survey Duration	Weather Conditions	Comments	Surveyor
13/07/2016	Breeding	vantage point survey	2	3hrs starting at 08:30	wind speed and direction: gentle breeze W; cloud cover and height: 66-100, >500m high; visibility: good (>2km); rain none; frost: none; snow: none		CG
13/07/2016	Breeding	vantage point survey	2	3hrs starting at 12:00	wind speed and direction: moderate breeze W; cloud cover and height: 33-66, >500m high; visibility: good (>2km); rain none; frost: none; snow: none		CG
04/08/2016	Breeding	vantage point survey	1	3hrs starting at 14:40	wind speed and direction: gentle breeze NW; cloud cover and height: 33-66, >500m high; visibility: good (>2km); rain none; frost: none; snow: none		CG
04/08/2016	Breeding	vantage point survey	1	3hrs starting at 18:10	wind speed and direction: light breeze NW; cloud cover and height: 66-100, >500m high; visibility: good (>2km); rain none; frost: none; snow: none		CG
11/08/2016	Breeding	vantage point survey	3 (4/5)	3hrs starting at 07:30	wind speed and direction: moderate breeze W; cloud cover and height: 66-100, >500m high; visibility: good (>2km); rain ; frost: none; snow: none		CG
11/08/2016	Breeding	vantage point survey	3 (4/5)	3hrs starting at 11:00	wind speed and direction: moderate breeze W; cloud cover and height: 66-100, >500m high; visibility: good (>2km); rain none; frost: none; snow: none		CG
12/08/2016	Breeding	vantage point survey	2	3hrs starting at 10:15	wind speed and direction: gentle breeze SW; cloud cover and height: 66-100, >500m high; visibility: good (>2km); rain light showers; frost: none; snow: none		CG
12/08/2016	Breeding	vantage point survey	2	3hrs starting at 13:45	wind speed and direction: moderate breeze SW; cloud cover and height: 66-100, >500m high; visibility: good (>2km); rain drizzle/mist; frost: none; snow: none		CG
30/09/2015	Both (Overlap)	wetland waterbird counts	2-3km buffer of study area	6hrs starting at 06:40	wind speed and direction: light air NE; cloud cover and height: 33-66%, 150-500m high; visibility: good (>2km); rain: none; frost: none; snow: none		TN

Date	Season	Survey Method	VP/ transect/ area number	Survey Duration	Weather Conditions	Comments	Surveyor
20/10/2015	Non-Breeding	wetland waterbird counts	2-3km buffer of study area	2hrs starting at 09:00	wind speed and direction: light breeze SE; cloud cover and height: 66-100%, 150-500m high; visibility: moderate (1-2km); rain: none; frost: none; snow: none		BOL
30/11/2015	Non-Breeding	wetland waterbird counts	2-3km buffer of study area	2hrs starting at 08:00	wind speed and direction: strong breeze N; cloud cover and height: 66-100%, 150-500m high; visibility: moderate (1-2km); rain: drizzle/mist; frost: none; snow: none		BOL
18/12/2015	Non-Breeding	wetland waterbird counts	2-3km buffer of study area	1hr 15mins starting at 08:15	wind speed and direction: moderate breeze S; cloud cover and height: 66-100%, <150m high; visibility: good (>2km); rain: none; frost: none; snow: none		SD
28/01/2016	Non-Breeding	wetland waterbird counts	2-3km buffer of study area	1hr 30mins starting at 08:30	wind speed and direction: moderate breeze SW; cloud cover and height: 66-100%, 150-500m high; visibility: moderate (1-2km); rain: none; frost: none; snow: none		SD&BOL
25/02/2016	Non-Breeding	wetland waterbird counts	2-3km buffer of study area	1hr 15mins starting at 14:30	wind speed and direction: light breeze SW; cloud cover and height: 66-100%, 150-500m high; visibility: moderate (1-2km); rain: none; frost: none; snow: none		SD
29/03/2016	Both (Overlap)	wetland waterbird counts	2-3km buffer of study area	2hrs starting at 14:30	wind speed and direction: gentle breeze SW; cloud cover and height: 33-66%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		SD
29/03/2016	Both (Overlap)	wetland waterbird counts	2-3km buffer of study area	2hrs starting at 14:30	wind speed and direction: gentle breeze SW; cloud cover and height: 0-33%, >500m high; visibility: moderate (1-2km); rain: none; frost: none; snow: none		SD&BOL
27/04/2016	Breeding	wetland waterbird counts	2-3km buffer of study area	8hrs 20mins starting at 11:45	wind speed and direction: gentle breeze SW; cloud cover and height: 0-33%, >500m high; visibility: moderate (1-2km); rain: none; frost: none; snow: none		DF

Date	Season	Survey Method	VP/ transect/ area number	Survey Duration	Weather Conditions	Comments	Surveyor
22/05/2016	Breeding	wetland waterbird counts	2-3km buffer of study area	2hrs starting at 10:00	wind speed and direction: light breeze W; cloud cover and height: 33-66%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		CG
30/09/2015	Both (Overlap)	winter bird transect	hinterland	4hrs 30mins starting at 12:00	wind speed and direction: fresh breeze NE; cloud cover and height: 0-33%, 150-500m high; visibility: good (>2km); rain: none; frost: none; snow: none		AD
02/10/2015	Non-Breeding	winter bird transect	2	3hrs starting at 10:00	wind speed and direction: light air W; cloud cover and height: 66-100%, <150m high; visibility: good (>2km); rain: none; frost: none; snow: none		AD
21/10/2015	Non-Breeding	winter bird transect	1	2hrs 25mins starting at 15:45	wind speed and direction: moderate breeze W; cloud cover and height: 66-100%, 150-500m high; visibility: moderate (1-2km); rain: light showers; frost: none; snow: none		SD
22/10/2015	Non-Breeding	winter bird transect	2	2hrs 40mins starting at 07:50	wind speed and direction: moderate breeze NE; cloud cover and height: 66-100%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		SD
26/11/2015	Non-Breeding	winter bird transect	2	1hr 50mins starting at 14:50	wind speed and direction: moderate breeze W; cloud cover and height: 66-100%, 150-500m high; visibility: moderate (1-2km); rain: none; frost: none; snow: none		SD
01/12/2015	Non-Breeding	winter bird transect	1	1hr 15mins starting at 15:00	wind speed and direction: gentle breeze S; cloud cover and height: 66-100%, 150-500m high; visibility: good (>2km); rain: none; frost: none; snow: none		SD
16/12/2015	Non-Breeding	winter bird transect	2	1hr 16mins starting at 08:30	wind speed and direction: moderate breeze SW; cloud cover and height: 66-100%, 150-500m high; visibility: good (>2km); rain: none; frost: none; snow: none		SD

Date	Season	Survey Method	VP/ transect/ area number	Survey Duration	Weather Conditions	Comments	Surveyor
17/12/2015	Non-Breeding	winter bird transect	1	1hr 15mins starting at 15:00	wind speed and direction: moderate breeze SW; cloud cover and height: 66-100%, 150-500m high; visibility: good (>2km); rain: none; frost: none; snow: none		SD
27/01/2016	Non-Breeding	winter bird transect	2	1hr 55mins starting at 14:35	wind speed and direction: gentle breeze W; cloud cover and height: 66-100%, 150-500m high; visibility: good (>2km); rain: none; frost: none; snow: none		SD
27/01/2016	Non-Breeding	winter bird transect	1	1hr 5mins starting at 10:15	wind speed and direction: moderate breeze SW; cloud cover and height: 33-66%, <150m high; visibility: moderate (1-2km); rain: light showers; frost: none; snow: none		BOL
24/02/2016	Non-Breeding	winter bird transect	2	2hrs 15mins starting at 09:30	wind speed and direction: light breeze SW; cloud cover and height: 0-33%, >500m high; visibility: good (>2km); rain: none; frost: all day; snow: none		BOL
24/02/2016	Non-Breeding	winter bird transect	1	1hr 15mins starting at 09:45	wind speed and direction: light breeze SW; cloud cover and height: 0-33%, >500m high; visibility: good (>2km); rain: none; frost: all day; snow: none		SD
31/03/2016	Both (Overlap)	winter bird transect	1	1hrs starting at 07:20	wind speed and direction: light breeze W; cloud cover and height: 0-33%, >500m high; visibility: good (>2km); rain: none; frost: ground; snow: none		SD
31/03/2016	Both (Overlap)	winter bird transect	2	2hrs starting at 08:40	wind speed and direction: light breeze W; cloud cover and height: 0-33%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		SD
31/03/2016	Both (Overlap)	winter bird transect	3	2hrs starting at 10:50	wind speed and direction: light breeze W; cloud cover and height: 0-33%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		SD

Date	Season	Survey Method	VP/ transect/ area number	Survey Duration	Weather Conditions	Comments	Surveyor
31/03/2016	Both (Overlap)	winter bird transect	4	1hr 55mins starting at 07:45	wind speed and direction: light breeze W; cloud cover and height: 0-33%, >500m high; visibility: good (>2km); rain: none; frost: ground; snow: none		BOL
31/03/2016	Both (Overlap)	winter bird transect	5	3hrs 25mins starting at 09:40	wind speed and direction: light breeze W; cloud cover and height: 0-33%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		BOL
18/04/2015	Breeding	breeding bird transect	T1-T5				BM
23/05/2015	Breeding	breeding bird transect	T1-T5				BM
30/06/2015	Breeding	breeding bird transect	T1-T5				BM
26/04/2016	Breeding	breeding birds quadrat	Q16-32	4hrs 40mins starting at 10:05	wind speed and direction: light breeze W; cloud cover and height: 0-33%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none	stopped to carry out R1 (1 hour) VP watch in NW corner	DF
28/04/2016	Breeding	breeding birds quadrat	Q1-15	3hrs starting at 11:45	wind speed and direction: moderate breeze W; cloud cover and height: 66-100%, <150m high; visibility: good (>2km); rain: none; frost: none; snow: none		DF
29/04/2016	Breeding	breeding birds quadrat	Q33-43	3hrs starting at 11:25	wind speed and direction: light air W; cloud cover and height: 33-66%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		DF
24/05/2016	Breeding	breeding birds quadrat	Q2-18; 25-29; 36-40	9hrs starting at 06:45	wind speed and direction: light breeze NE; cloud cover and height: 0-33%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		CG
25/05/2016	Breeding	breeding birds quadrat	Q21, 22, 32, 42, 43	9hrs starting at 06:45	wind speed and direction: light breeze NE; cloud cover and height: 0-33%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		CG

Date	Season	Survey Method	VP/ transect/ area number	Survey Duration	Weather Conditions	Comments	Surveyor
14/06/2016	Breeding	breeding birds quadrat	Q1-18; 26-29; 34; 36-40	6hrs 30mins starting at 07:30	wind speed and direction: light breeze NE; cloud cover and height: 66-100%, 150-500m high; visibility: good (>2km); rain: drizzle/mist; frost: none; snow: none		CG
16/06/2016	Breeding	breeding birds quadrat	Q19-24; 30-35; 41- 43	1hr 30mins starting at 08:30	wind speed and direction: light breeze N; cloud cover and height: 33-66%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		CG
12/07/2016	Breeding	breeding birds quadrat	Q1-35	6hrs 45mins starting at 08:30	wind speed and direction: light breeze W; cloud cover and height: 66-100%, >500m high; visibility: good (>2km); rain: drizzle/mist; frost: none; snow: none		CG
27/04/2016	Breeding	breeding raptor survey	study area and 2km buffer of study area	8hrs 20mins starting at 11:45	wind speed and direction: light air W; cloud cover and height: 0-33%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		DF
23/05/2016	Breeding	breeding raptor survey	study area and 2km buffer of study area	5hrs starting at 12:00	wind speed and direction: light breeze NW; cloud cover and height: 0-33%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		CG
23/05/2016	Breeding	breeding raptor survey	study area and 2km buffer of study area	3hrs starting at 12:00	wind speed and direction: light breeze NW; cloud cover and height: 0-33%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		CG
13/06/2016	Breeding	breeding raptor survey	study area and 2km buffer of study area	3hrs starting at 10:30	wind speed and direction: light air SW; cloud cover and height: 66-100%, 150-500m high; visibility: good (>2km); rain: none; frost: none; snow: none		CG

Date	Season	Survey Method	VP/ transect/ area number	Survey Duration	Weather Conditions	Comments	Surveyor
15/06/2016	Breeding	breeding raptor survey	study area and 2km buffer of study area	3hrs starting at 13:30	wind speed and direction: light breeze NW; cloud cover and height: 33-66%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		CG
08/07/2016	Breeding	breeding raptor survey	study area and 2km buffer of study area	3hrs starting at 16:00	wind speed and direction: moderate breeze NW; cloud cover and height: 33-66%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		CG
12/07/2016	Breeding	breeding raptor survey	study area and 2km buffer of study area	3hrs starting at 19:00	wind speed and direction: moderate breeze W; cloud cover and height: 33-66%, >500m high; visibility: good (>2km); rain: none; frost: none; snow: none		CG

**Table 1 Waterbird records – Ballydermot and Derrygreenagh Bog Groups 2012-2016**

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Non-breeding	09/12/2013	Ballybeg	Whooper Swan	3	flying over site at 20m high
Non-breeding	27/12/2013	Ballybeg	Whooper Swan	10	flying N over site
Non-breeding	09/01/2014	Ballybeg	Whooper Swan	13	flew N over E margin of site
Non-breeding	14/01/2014	Ballybeg	Whooper Swan	15	flew W-E across site in a S direction
Non-breeding	19/02/2014	Ballybeg	Whooper Swan	3	flew NE over site
Non-breeding	08/03/2014	Ballybeg	Whooper Swan	4	flew S over W boundary
Non-breeding	01/01/2013	Ballycon	Northern Lapwing	22	roosting
Non-breeding	08/01/2013	Ballycon	Eurasian Teal	20	present on site
Non-breeding	17/01/2013	Ballycon	Whooper Swan	18	PB4&WS1 (regenerating cutaway bog wetland with developing heath and scrub); feeding and roosting
Non-breeding	12/02/2013	Ballycon	Northern Lapwing	450	roosting
Both (overlap)	13/03/2013	Ballycon	Little Grebe	4	2 displaying pairs
Both (overlap)	26/03/2013	Ballycon	Northern Lapwing	4	2 territorial pairs
Breeding	Apr-13	Ballycon	Mute Swan	4	2 pairs on nests
Breeding	25/04/2013	Ballycon	Black-headed Gull	1	adult
Breeding	25/04/2013	Ballycon	Common Greenshank	1	likely a migrant
Breeding	Jul-13	Ballycon	Ringed Plover	6+	3 territorial pairs with well grown fledged young
Breeding	19/07/2013	Ballycon	Eurasian Teal	1	possible breeder
Breeding	19/07/2013	Ballycon	Northern Lapwing	64	PB4 (bare peat with regenerating wetland); loose flock near railway line including adults and full grown juveniles
Breeding	19/07/2013	Ballycon	Common Redshank	1	lone bird likely a migrant although possibly breeding as have done so in past

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Breeding	19/07/2013	Ballycon	Water Rail	1	audible
Breeding	Breeding season 2013	Ballycon	Little Grebe	2+	at least 1 pair present
Breeding	Breeding season 2013	Ballycon	Common Snipe	7	displaying
Breeding	Breeding season 2013	Ballycon	Mallard	14	confirmed breeding
Breeding	Breeding season 2013	Ballycon	Common Moorhen	3+	confirmed breeding
Non-breeding	Oct-13	Ballycon	Northern Lapwing	<38	present
Non-breeding	25/11/2013	Ballycon	Whooper Swan	7	PB4&WS1 (regenerating cutaway bog wetland with developing heath and scrub); feeding
Non-breeding	Dec-13	Ballycon	Northern Lapwing	<38	present
Non-breeding	03/12/2013	Ballycon	Whooper Swan	2	PB4&WS1 (regenerating cutaway bog wetland with developing heath and scrub); feeding
Non-breeding	21/12/2013	Ballycon	Little Egret	1	PB4 (bare peat with temporary standing water); feeding in shallow water for at least 2hrs and flew S
Non-breeding	21/12/2013	Ballycon	Water Rail	1	heard calling
Non-breeding	28/12/2013	Ballycon	Whooper Swan	55	PB4&WS1 (regenerating cutaway bog wetland with developing heath and scrub); feeding
Non-breeding	28/12/2013	Ballycon	Eurasian Teal	12	present
Non-breeding	08/01/2014	Ballycon	Whooper Swan	52	PB4&WS1 (regenerating cutaway bog wetland with developing heath and scrub); feeding
Non-breeding	30/01/2014	Ballycon	Whooper Swan	49	PB4&WS1 (regenerating cutaway bog wetland with developing heath and scrub); feeding
Non-breeding	30/01/2014	Ballycon	Northern Lapwing	45	roosting
Non-breeding	Feb-14	Ballycon	Northern Lapwing	<38	present

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Non-breeding	18/02/2014	Ballycon	Northern Lapwing	180	roosting
Both (overlap)	Mar-14	Ballycon	Northern Lapwing	<38	present
Both (overlap)	04/03/2014	Ballycon	Whooper Swan	43	PB4&WS1 (regenerating cutaway bog wetland with developing heath and scrub); feeding
Both (overlap)	12/03/2014	Ballycon	Whooper Swan	5	PB4&WS1 (regenerating cutaway bog wetland with developing heath and scrub); feeding
Both (overlap)	13/03/2014	Ballycon	Little Grebe	4	2 displaying pairs
Both (overlap)	18/03/2014	Ballycon	Whooper Swan	14	PB4&WS1 (regenerating cutaway bog wetland with developing heath and scrub); feeding
Both (overlap)	25/03/2014	Ballycon	Whooper Swan	11	PB4&WS1 (regenerating cutaway bog wetland with developing heath and scrub); feeding
Breeding	Breeding season 2014	Ballycon	Little Grebe	2+	at least 1 pair present
Breeding	Breeding season 2014	Ballycon	Ringed Plover	6	three territorial pairs present
Breeding	Breeding season 2014	Ballycon	Mallard	20	confirmed breeding - immature birds present
Breeding	Breeding season 2014	Ballycon	Grey Heron	1+	non-breeding
Breeding	Breeding season 2014	Ballycon	Common Moorhen	2+	confirmed breeding
Breeding	May-14	Ballycon	Mute Swan	2	FS1 (reedbed); pair on nest
Breeding	13/05/2014	Ballycon	Water Rail	2+	PB4 (regenerating wetland); heard calling in the morning
Breeding	13/05/2014	Ballycon	Northern Lapwing	18	nine territorial pairs
Breeding	Jun-14	Ballycon	Mute Swan	2	FS1 (reedbed); pair on nest
Breeding	05/06/2014	Ballycon	Eurasian Teal	1	male flew up from suitable breeding habitat
Breeding	05/06/2014	Ballycon	Northern Lapwing	20+	at least 10 pairs

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Breeding	05/06/2014	Ballycon	Common Snipe	5+	displaying
Breeding	Jul-14	Ballycon	Mute Swan	6	1 adults with 5 young - presumed successful breeding
Breeding	02/07/2014	Ballycon	Eurasian Teal	1	FS1 (reedbed); present - breeding likely
Breeding	02/07/2014	Ballycon	Northern Lapwing	20	PB4 (peat stockpiles); loafing on peat banks in the north of the site. Several fully grown young present
Breeding	25/04/2015	Ballycon	Greylag Goose	2	strongly territorial pair observed
Breeding	25/04/2015	Ballycon	Whimbrel	1	likely a migrant
Non-breeding	Winter season 2012/13	Ballycon	Whooper Swan	<46	present throughout the winter until February
Non-breeding	Winter season 2012/13	Ballycon	Grey Heron	<4	present
Non-breeding	Winter season 2012/13	Ballycon	Mute Swan	2-7	present all winter and begin nesting in March
Non-breeding	Winter season 2012/13	Ballycon	Mallard	<14	present all winter
Non-breeding	Winter season 2013/14	Ballycon	Mute Swan	2 to 9	present through winter and begin nesting in March
Non-breeding	Winter season 2013/14	Ballycon	Mallard	<10	present
Non-breeding	Winter season 2013/14	Ballycon	Grey Heron	1 to 4	present
Non-breeding	Winter season 2013/14	Ballycon	Little Grebe	1+	present
Non-breeding	Winter season 2013/14	Ballycon	Common Snipe	<5	present throughout the winter
Breeding	Breeding season 2013	Ballycon	Northern Lapwing	12	6 territorial pairs

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Breeding	Breeding season 2013	Ballycon	Grey Heron	1+	non-breeding
Breeding	Breeding season 2013	Ballydermot	Mallard	2+	confirmed breeding
Breeding	Breeding season 2013	Ballydermot	Grey Heron	1+	non-breeding
Breeding	Breeding season 2013	Ballydermot	Common Moorhen	1+	probably breeding on site
Breeding	May-13	Ballydermot	Common Snipe	2	PB4 (regenerating bog); displaying
Breeding	May-13	Ballydermot	Eurasian Teal	2	PB4 (bare peat with ponding); pair present
Non-breeding	12/10/2013	Ballydermot	European Golden Plover	40	PB4 (bare peat); roosting and then flew SW
Non-breeding	26/10/2013	Ballydermot	European Golden Plover	100	high over site drifting S
Non-breeding	27/10/2013	Ballydermot	European Golden Plover	200	high over site moving E
Non-breeding	06/11/2013	Ballydermot	Northern Lapwing	24	flew S over site
Non-breeding	20/11/2013	Ballydermot	European Golden Plover	18	PB4 (bare peat); flew into site and landed
Non-breeding	05/12/2013	Ballydermot	Eurasian Teal	6	PB4 (regenerating cutaway bog with pools and scrub); flew in
Non-breeding	06/12/2013	Ballydermot	Northern Lapwing	40	flew SW over site
Non-breeding	Winter season 2013/14	Ballydermot	Common Snipe	1+	present
Non-breeding	11/01/2014	Ballydermot	Eurasian Teal	3	PB4 (regenerating cutaway bog with pools and scrub); flew in
Non-breeding	12/01/2014	Ballydermot	Northern Lapwing	18	drifted W over site
Non-breeding	25/01/2014	Ballydermot	European Golden Plover	25	PB4 (bare peat); landed in S of site

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Non-breeding	21/02/2014	Ballydermot	European Golden Plover	80	flew E across S of site
Non-breeding	22/02/2014	Ballydermot	European Golden Plover	100	PB4 (bare peat); flew in and landed
Both (overlap)	09/03/2014	Ballydermot	Eurasian Curlew	14	passed NE over site
Both (overlap)	22/03/2014	Ballydermot	Eurasian Curlew	9	flew N just W of site
Breeding	Breeding season 2014	Ballydermot	Mallard	1+	confirmed breeding - downy young observed
Breeding	Breeding season 2014	Ballydermot	Grey Heron	1+	flyovers - non-breeding
Breeding	Breeding season 2014	Ballydermot	Common Moorhen	2+	pair observed in suitable nesting habitat - probable breeding
Breeding	Breeding season 2014	Ballydermot	Mallard	2+	downy young observed - confirmed breeding
Breeding	May-14	Ballydermot	Common Snipe	3	PB1 (remnant high bog)&PB4 (bare peat); displaying
Breeding	May-14	Ballydermot	Common Snipe	3	PB4 (bare peat); PB1 (remnant high bog); displaying
Both (overlap)	25/03/2015	Ballydermot	European Golden Plover	100	flew E across Derryarkin at 200,
Both (overlap)	25/03/2015	Ballydermot	Eurasian Curlew	30	flying over N at 150m
Both (overlap)	25/03/2015	Ballydermot	European Golden Plover	100	flew high across site
Both (overlap)	25/03/2015	Ballydermot	Eurasian Curlew	30	flew N over site
Both (overlap)	30/03/2015	Ballydermot	European Golden Plover	12	PB4 (bare peat); resting and then flew NW
Both (overlap)	30/03/2015	Ballydermot	European Golden Plover	12	PB4 (bare peat); resting on peat and flying around
Breeding	Breeding season 2015	Ballydermot	Common Snipe	1	PB4 (bare peat with temporary standing water); displaying bird in central area of bog

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Breeding	Breeding season 2015	Ballydermot	Mallard	1+	probably breeding on site
Breeding	Breeding season 2015	Ballydermot	Grey Heron	1+	probably breeding on site
Breeding	Breeding season 2015	Ballydermot	Common Moorhen	1+	probably breeding on site
Breeding	10/04/2015	Ballydermot	European Golden Plover	5	birds in summer plumage landed on site for 18mins and then flew N
Non-breeding	Jan-13	Ballykeane	Whooper Swan	14	FL8 (disused quarry lake); GA1 (improved agricultural grassland); swimming and grazing
Non-breeding	05/11/2013	Ballykeane	Whooper Swan	12	flying around just beyond the W boundary of the site where swans have been recorded grazing on improved pasture in previous years (2012/13). Probably only an occasional feeding site
Non-breeding	20/12/2013	Ballykeane	Whooper Swan	4	flying over the NW of the site
Non-breeding	08/11/2013	Blackriver Bog	Whooper Swan	6	flew SW over S end of site
Non-breeding	17/01/2014	Blackriver Bog	Whooper Swan	5	flew in from Lullymore direction W across the site
Non-breeding	21/12/2012	Cavemount	Whooper Swan	9	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Non-breeding	Winter season 2012/13	Cavemount	Whooper Swan	100+	PB4 (regenerating wet bog); feeding and roosting throughout the winter season in the E sector
Non-breeding	Winter season 2012/13	Cavemount	Grey Heron	1 or 2	present on site
Non-breeding	Winter season 2012/13	Cavemount	Mallard	<6	PB4 (regenerating wet bog); present
Non-breeding	Winter season 2013/14	Cavemount	Grey Heron	1 to 2	present on site
Non-breeding	08/01/2013	Cavemount	Whooper Swan	34	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Non-breeding	17/01/2013	Cavemount	Whooper Swan	158	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Non-breeding	21/01/2013	Cavemount	Whooper Swan	52	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Non-breeding	21/01/2013	Cavemount	Eurasian Teal	5	present
Non-breeding	31/01/2013	Cavemount	Whooper Swan	64	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Non-breeding	06/02/2013	Cavemount	Northern Pintail	2	PB4 (regenerating cutaway bog with pools and scrub); present on wetland
Non-breeding	12/02/2013	Cavemount	Whooper Swan	118	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Non-breeding	20/02/2013	Cavemount	Whooper Swan	119	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Both (overlap)	01/03/2013	Cavemount	Whooper Swan	129	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Both (overlap)	12/03/2013	Cavemount	Greylag Goose	1	likely a feral bird - flocking with swans
Both (overlap)	13/03/2013	Cavemount	Whooper Swan	108	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Both (overlap)	13/03/2013	Cavemount	Mute Swan	4	present
Both (overlap)	26/03/2013	Cavemount	Whooper Swan	74	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Breeding	Breeding season 2013	Cavemount	Little Grebe	2	1 pair in E sector of site heard all season
Breeding	Breeding season 2013	Cavemount	Ringed Plover	14+	7 territorial pairs in E sector of site. Full grown fledged young in July
Breeding	Breeding season 2013	Cavemount	Northern Lapwing	18	9 territorial pairs in E sector of site behaving as loose colony and showing strong breeding behaviour with aggression towards other species
Breeding	Breeding season 2013	Cavemount	Common Snipe	6+	minimum of 3 displaying pairs in E sector of site
Breeding	Breeding season 2013	Cavemount	Mallard	12	confirmed breeding

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Breeding	Breeding season 2013	Cavemount	Grey Heron	1+	non-breeding
Breeding	Breeding season 2013	Cavemount	Common Moorhen	2+	confirmed breeding
Breeding	Apr-13	Cavemount	Mute Swan	4	2 pairs on nests
Breeding	Apr-13	Cavemount	Black-headed Gull	12	adults showing signs of holding territory but no signs of nests
Breeding	19/04/2013	Cavemount	Eurasian Teal	8	8 birds including 3 pairs observed. Breeding possible
Breeding	19/04/2013	Cavemount	European Golden Plover	5	PB4 (bare peat with regenerating wetland); summer plumage on E wetland, likely on migration
Breeding	May-13	Cavemount	Mute Swan	9	2 pairs, 1 with 5 fledged young
Breeding	May-13	Cavemount	Black-headed Gull	12	adults showing signs of holding territory but no signs of nests
Breeding	May-13	Cavemount	Eurasian Teal	2	pair in suitable breeding habitat
Breeding	30/05/2013	Cavemount	Common Redshank	2	PB4 (bare peat with regenerating wetland); pair displaying and calling
Breeding	Jun-13	Cavemount	Eurasian Teal	2	pair in suitable breeding habitat - probably bred
Breeding	17/07/2013	Cavemount	Northern Lapwing	43	flock of 43 birds including adults and full grown juveniles and some territorial pairs
Breeding	17/07/2013	Cavemount	Common Sandpiper	1	likely a migrant
Breeding	17/07/2013	Cavemount	Black-headed Gull	7	juveniles likely bred elsewhere
Non-breeding	Oct-13	Cavemount	Little Grebe		present
Non-breeding	23/10/2013	Cavemount	Mallard	35	flew into site from the SE
Non-breeding	06/11/2013	Cavemount	Whooper Swan	39	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Non-breeding	06/11/2013	Cavemount	European Golden Plover	33	flew across site from E at 100m high and continued W
Non-breeding	06/11/2013	Cavemount	Northern Lapwing	33	flew across site from E to W

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Non-breeding	12/11/2013	Cavemount	Whooper Swan	44	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Non-breeding	12/11/2013	Cavemount	Northern Lapwing	32	flying over site at 20m high
Non-breeding	18/11/2013	Cavemount	Whooper Swan	267	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Non-breeding	18/11/2013	Cavemount	Eurasian Wigeon	55	present
Non-breeding	20/11/2013	Cavemount	Whooper Swan	20	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Non-breeding	25/11/2013	Cavemount	Whooper Swan	221	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Non-breeding	25/11/2013	Cavemount	Eurasian Wigeon	60	present
Non-breeding	03/12/2013	Cavemount	Whooper Swan	226	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Non-breeding	03/12/2013	Cavemount	Eurasian Teal	10	present
Non-breeding	09/12/2013	Cavemount	Whooper Swan	259	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Non-breeding	09/12/2013	Cavemount	European Golden Plover	600	flew over site at 150m high and continued SW
Non-breeding	17/12/2013	Cavemount	Whooper Swan	242	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Non-breeding	17/12/2013	Cavemount	Eurasian Teal	5	present
Non-breeding	17/12/2013	Cavemount	Eurasian Wigeon	30	present
Non-breeding	28/12/2013	Cavemount	Whooper Swan	134	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Non-breeding	08/01/2014	Cavemount	Whooper Swan	128	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Non-breeding	21/01/2014	Cavemount	Eurasian Teal	5	present
Non-breeding	30/01/2014	Cavemount	Whooper Swan	59	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Non-breeding	30/01/2014	Cavemount	Greylag Goose	1	likely a feral bird

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Non-breeding	Feb-14	Cavemount	Little Grebe		present
Non-breeding	06/02/2014	Cavemount	Whooper Swan	39	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Non-breeding	06/02/2014	Cavemount	Northern Lapwing	22	flew along E boudary of site
Non-breeding	06/02/2014	Cavemount	Mute Swan	19	present
Non-breeding	06/02/2014	Cavemount	Greylag Goose	1	likely a feral bird
Non-breeding	07/02/2014	Cavemount	Northern Lapwing	16	flew along E boudary of site
Non-breeding	18/02/2014	Cavemount	Whooper Swan	28	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Non-breeding	18/02/2014	Cavemount	Common Snipe	3	present
Non-breeding	26/02/2014	Cavemount	Whooper Swan	17	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Both (overlap)	Mar-14	Cavemount	Little Grebe		present
Both (overlap)	04/03/2014	Cavemount	Whooper Swan	12	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Both (overlap)	12/03/2014	Cavemount	Whooper Swan	34	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Both (overlap)	18/03/2014	Cavemount	Whooper Swan	19	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Both (overlap)	19-Mar	Cavemount	Northern Lapwing	58	on site including several displaying birds
Both (overlap)	19/03/2014	Cavemount	Eurasian Wigeon	7	present
Both (overlap)	20/03/2014	Cavemount	Black-headed Gull	28	prospecting breeding birds
Breeding	Breeding season 2014	Cavemount	Mute Swan	<10	present through the summer - mostly immatures
Breeding	Breeding season 2014	Cavemount	Little Grebe	6	three pairs west of the railway with one active nest recorded

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Breeding	Breeding season 2014	Cavemount	Coot	6+	three pairs present and some fledged young observed
Breeding	Breeding season 2014	Cavemount	Ringed Plover	10+	five territorial pairs on site and fledged young seen in June and July
Breeding	Breeding season 2014	Cavemount	Northern Lapwing	<12	up to six territorial pairs in the eastern sector of the site throughout the season
Breeding	Breeding season 2014	Cavemount	Common Snipe	<3	displaying in eastern sector of site
Breeding	Breeding season 2014	Cavemount	Mallard	25+	confirmed breeding - immature birds present
Breeding	Breeding season 2014	Cavemount	Grey Heron	1+	non-breeding
Breeding	Breeding season 2014	Cavemount	Common Moorhen	2+	confirmed breeding
Breeding	May-14	Cavemount	Greylag Goose	2	territorial pair observed
Breeding	07/05/2014	Cavemount	Mute Swan	2	pair on nest but later found to be unsuccessful
Breeding	07/05/2014	Cavemount	Eurasian Wigeon	1	male present
Breeding	07/05/2014	Cavemount	Northern Lapwing	28	loose flock in the southern sector of the site showing no breeding behaviour
Breeding	07/05/2014	Cavemount	Dunlin	7	in summer plumage
Breeding	07/05/2014	Cavemount	Common Redshank	4	flying around the site
Breeding	07/05/2014	Cavemount	Black-headed Gull	80	PB4&WS1 (scrub and swampy vegetation in regenerating area flooded areas of cutover peat); established breeding colony with approximately 20 nests
Breeding	30/05/2014	Cavemount	Eurasian Wigeon	2	pair in suitable breeding habitat - possibly bred
Breeding	30/05/2014	Cavemount	Tufted Duck	2	pair in suitable breeding habitat - possibly bred

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Breeding	30/05/2014	Cavemount	Common Redshank	4	present on the site - no evidence of breeding
Breeding	30/05/2014	Cavemount	Common Greenshank	1	single bird on site
Breeding	30/05/2014	Cavemount	Black-headed Gull	120	PB4&WS1 (scrub and swampy vegetation in regenerating area flooded areas of cutover peat); established breeding colony - hatchlings present on the nest
Breeding	24/06/2014	Cavemount	Northern Lapwing	67	PB4 (peat stockpiles); roosting flock including some fully grown juveniles and several territorial pairs
Breeding	24/06/2014	Cavemount	Common Greenshank	1	single bird on site
Breeding	24/06/2014	Cavemount	Black-headed Gull	160	PB4&WS1 (scrub and swampy vegetation in regenerating area flooded areas of cutover peat); high activity among adults in the breeding colony
Breeding	24/06/2014	Cavemount	Lesser Black-backed Gull	5	PB4&WS1 (scrub and swampy vegetation in regenerating area flooded areas of cutover peat); 1 adults and 4 immature birds harassing Black-headed Gull colony
Breeding	30/07/2014	Cavemount	Dunlin	4	flocking with Ringed Plover
Breeding	30/07/2014	Cavemount	Common Snipe	10	likely post-breeding birds
Breeding	30/07/2014	Cavemount	Black-headed Gull	20	PB4&WS1 (scrub and swampy vegetation in regenerating area flooded areas of cutover peat); present in the breeding colony, including 7 fledges
Non-breeding	23/10/2014	Cavemount	Common Snipe	2	present
Non-breeding	05/11/2014	Cavemount	Whooper Swan	8	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Non-breeding	12/12/2014	Cavemount	Whooper Swan	1	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Non-breeding	16/11/2015	Cavemount	Whooper Swan	24	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting
Non-breeding	10/12/2015	Cavemount	Whooper Swan	68	PB4 (bare peat with temporary standing water); feeding and roosting
Non-breeding	05/01/2016	Cavemount	Whooper Swan	7	PB4 (wet bare peat with regenerating wet bog vegetation); feeding and roosting

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Non-breeding	30/10/2013	Clonad	Whooper Swan	2	flew N over the site at 30m
Breeding	11/05/2015	Clonroosk Bog	Common Snipe	6	birds flushed, one showing display behaviour
Both (overlap)	16/03/2013	Clonsast	Common Snipe	2	PB4 (bare peat); present
Breeding	Breeding season 2013	Clonsast	Mallard	1+	possible breeder
Breeding	Breeding season 2013	Clonsast	Common Snipe	2	PB4 (regenerating cutaway bog with pools and scrub); pair probably bred in NW corner of site
Breeding	Breeding season 2014	Clonsast	Mallard	1+	probable breeding - courtship display observed
Breeding	Breeding season 2014	Clonsast	Common Snipe	1	bird displaying in suitable breeding habitat in NW of site - probable breeding
Non-breeding	Winter season 2012/13	Clonsast Farm	Whooper Swan	25	GA1 (improved agricultural grassland); grazing on grassland from January to March
Both (overlap)	15/03/2013	Clonsast Farm	European Golden Plover	500	GA1 (improved agricultural grassland); grounded on grassland
Breeding	20/04/2013	Clonsast Farm	European Golden Plover	450	GA1 (agricultural grassland); flock likely on migration
Non-breeding	12/10/2013	Clonsast Farm	European Golden Plover	95	GA1 (improved agricultural grassland); grounded
Non-breeding	12/10/2013	Clonsast Farm	Northern Lapwing	19	GA1 (improved agricultural grassland); feeding on grassland (with Golden Plover)
Non-breeding	03/12/2013	Clonsast Farm	Whooper Swan	6	GA1 (improved agricultural grassland); feeding
Non-breeding	06/02/2014	Clonsast Farm	Northern Lapwing	18	GA1 (improved agricultural grassland); feeding on grassland, then flew N
Non-breeding	18/12/2012	Clonsast North	Common Snipe	3	present
Non-breeding	Jan-13	Clonsast North	Grey Heron	1	flew over the site
Non-breeding	28/02/2013	Clonsast North	Ringed Plover	2	pair present in suitable breeding habitat

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Both (overlap)	Mar-13	Clonsast North	Northern Lapwing	2	breeding pair present
Both (overlap)	17 March 2013	Clonsast North	Eurasian Teal	4	PB4 (bare peat with temporary standing water); two pairs on pools -possible nesting location)
Breeding	15/06/2013	Clonsast North	Northern Lapwing	12	present on site
Breeding	Breeding season 2013	Clonsast North	Ringed Plover	4	PB4 (regenerating cutaway bog with pools and scrub); 2 pairs successful bred young in wetland in NE sector of site
Breeding	Breeding season 2013	Clonsast North	Northern Lapwing	4	PB4 (regenerating cutaway bog with pools and scrub); 2 pairs bred successfully with fledged young observed in NE sector of site
Breeding	Breeding season 2013	Clonsast North	Common Snipe	3+	3 territories with drumming males and 1 adult feigning injury
Breeding	Breeding season 2013	Clonsast North	Mallard	2	probably breeding on site
Breeding	Breeding season 2013	Clonsast North	Grey Heron	1	non-breeding
Breeding	Jul-13	Clonsast North	Black-headed Gull	1	PB4 (regenerating cutaway bog with pools and scrub); juvenile feeding in pools - likely bred elsewhere
Non-breeding	11/10/2013	Clonsast North	Whooper Swan	7	PB4 (regenerating cutaway bog with pools and scrub); flew in and landed in the pools or continued SE over the site
Non-breeding	15/11/2013	Clonsast North	Mallard	56	present
Non-breeding	Winter season 2013/14	Clonsast North	Mallard	<10	present
Non-breeding	Winter season 2013/14	Clonsast North	Eurasian Teal	<10	present
Non-breeding	Winter season 2013/14	Clonsast North	Common Snipe	1 to 3	present

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Non-breeding	16/01/2014	Clonsast North	Whooper Swan	8	PB4 (regenerating cutaway bog with pools and scrub); flew in from SE and landed in pools. Feathers and droppings in this location indicate they have been roosting here
Non-breeding	24/02/2014	Clonsast North	European Golden Plover	17	flew over SE sector of site
Both (overlap)	15/03/2014	Clonsast North	European Golden Plover	150	PB4 (bare peat); flew over central part of site and landed in open bog near the S boundary
Both (overlap)	15/03/2014	Clonsast North	Northern Lapwing	2+	breeding birds returned
Non-breeding	15/03/2014	Clonsast North	Eurasian Teal	25	PB4 (regenerating cutaway bog with pools and scrub); at the pools
Breeding	Breeding season 2014	Clonsast North	Ringed Plover	4+	PB4 (regenerating cutaway bog with pools and scrub); 2 pairs bred successfully with fledged young observed in NE sector of site
Breeding	Breeding season 2014	Clonsast North	Northern Lapwing	6+	PB4 (regenerating cutaway bog with pools and scrub); 3 pairs bred - 2 in the NE sector of the site and 1 in the SE corner
Breeding	Breeding season 2014	Clonsast North	Common Snipe	3+	3 territories identified with displaying males
Breeding	Breeding season 2014	Clonsast North	Mallard	4+	at least 2 pairs probably breeding
Breeding	Breeding season 2014	Clonsast North	Grey Heron	1	non-breeding
Breeding	25/04/2014	Clonsast North	Black-headed Gull	4	PB4 (regenerating cutaway bog with pools and scrub); displaying over pools in NE sector of site
Breeding	19/07/2014	Clonsast North	Northern Lapwing	32	post-breeding flock including several juveniles
Breeding	19/07/2014	Clonsast North	Common Greenshank	1	likely a migrant
Non-breeding	14/10/2013	Clonsast South	Eurasian Teal	4	PB4 (regenerating cutaway bog with pools and scrub); landed in a bog pool in the central area of the site
Non-breeding	17/10/2013	Clonsast South	Whooper Swan	4	flew E over extreme N of site

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Non-breeding	15/11/2013	Clonsast South	Northern Lapwing	22	flew W across site
Non-breeding	17/11/2013	Clonsast South	European Golden Plover	14	flew N over site
Non-breeding	Winter season 2013/14	Clonsast South	Common Snipe	<5	present
Non-breeding	28/01/2014	Clonsast South	Whooper Swan	2	flew S into the site from a NW direction
Non-breeding	28/01/2014	Clonsast South	European Golden Plover	23	flew NE towards Clonsast North bog
Non-breeding	24/02/2014	Clonsast South	European Golden Plover	17	flew S into the site from Clonsast North bog
Non-breeding	Nov-13	Cloonroosk Bog	Common Snipe	12	present
Non-breeding	25/10/2013	Codd North	European Golden Plover	28	PB4 (bare peat); flew in from N and landed
Non-breeding	05/11/2013	Codd North	Northern Lapwing	24	flew N over site
Non-breeding	24/11/2013	Codd North	European Golden Plover	80	circled high over site and drifted E
Non-breeding	Winter season 2013/14	Codd North	Common Snipe	<3	present
Non-breeding	26/01/2014	Codd North	Northern Lapwing	30	flew NE over site
Non-breeding	23/02/2014	Codd North	European Golden Plover	100	flew in a NE direction high over site
Breeding	25/04/2015	Codd North	European Golden Plover	60	PB4 (bare peat); landed briefly and flew W at 100m. Migrants
Non-breeding	18/10/2013	Codd South	European Golden Plover	80+	PB4 (bare peat); roosting and then flew NE
Non-breeding	12/11/2013	Codd South	Common Snipe	12	PB1 (remnant high bog); present
Non-breeding	20/11/2013	Codd South	European Golden Plover	100	flew high over site in a S direction
Non-breeding	Winter season 2013/14	Codd South	Common Snipe	1 to 3	present

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Non-breeding	17/02/2014	Codd South	European Golden Plover	9	flew NE over site
Both (overlap)	07/03/2014	Codd South	Eurasian Curlew	8	passed high over site in a N direction
Both (overlap)	24/03/2014	Codd South	European Golden Plover	20	PB4 (bare peat); resting on bare peat, then flew SE
Both (overlap)	24/03/2015	Codd South	European Golden Plover	20	PB4 (bare peat); resting and then flew NE. Some in summer plumage
Non-breeding	21/12/2012	Derryarkin	Whooper Swan	16	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	Winter season 2012/13	Derryarkin	Whooper Swan	unspecified	regularly used throughout winter for feeding - roost at Roadstone quarry pond. Also roosted on flooded wetlands in the E sector of the site
Non-breeding	08/01/2013	Derryarkin	Whooper Swan	44	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	17/01/2013	Derryarkin	Whooper Swan	27	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	21/01/2013	Derryarkin	Whooper Swan	82	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	31/01/2013	Derryarkin	Whooper Swan	39	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	12/02/2013	Derryarkin	Whooper Swan	24	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	20/02/2013	Derryarkin	Whooper Swan	21	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Both (overlap)	01/03/2013	Derryarkin	Whooper Swan	19	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Both (overlap)	13/03/2013	Derryarkin	Whooper Swan	38	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Both (overlap)	26/03/2013	Derryarkin	Whooper Swan	26	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	Nov-13	Derryarkin	Whooper Swan	12	PB4 (regerating bog); feeding
Non-breeding	18/11/2013	Derryarkin	Whooper Swan	3	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	20/11/2013	Derryarkin	Whooper Swan	30+	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	25/11/2013	Derryarkin	Whooper Swan	39	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	03/12/2013	Derryarkin	Whooper Swan	61	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	09/12/2013	Derryarkin	Whooper Swan	64	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	17/12/2013	Derryarkin	Whooper Swan	54	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	28/12/2013	Derryarkin	Whooper Swan	51	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	03/01/2014	Derryarkin	Whooper Swan	45	PB4 (regerating bog); feeding
Non-breeding	08/01/2014	Derryarkin	Whooper Swan	82	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	30/01/2014	Derryarkin	Whooper Swan	51	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	06/02/2014	Derryarkin	Whooper Swan	73	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-	10/02/2014	Derryarkin	Whooper Swan	92	PB4 (regerating bog); feeding

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
breeding					
Non-breeding	18/02/2014	Derryarkin	Whooper Swan	70	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	26/02/2014	Derryarkin	Whooper Swan	86	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Both (overlap)	04/03/2014	Derryarkin	Whooper Swan	113	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Both (overlap)	12/03/2014	Derryarkin	Whooper Swan	104	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Both (overlap)	18/03/2014	Derryarkin	Whooper Swan	95	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Both (overlap)	25/03/2014	Derryarkin	Whooper Swan	54	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	16/10/2014	Derryarkin	Whooper Swan	9	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	05/11/2014	Derryarkin	Whooper Swan	56	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	12/12/2014	Derryarkin	Whooper Swan	118	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	06/01/2015	Derryarkin	Whooper Swan	89	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	10/01/2015	Derryarkin	Whooper Swan	109	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	09/02/2015	Derryarkin	Whooper Swan	102	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Non-breeding	25/02/2015	Derryarkin	Whooper Swan	111	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Both (overlap)	19/03/2015	Derryarkin	Whooper Swan	65	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	04/12/2015	Derryarkin	Whooper Swan	48	GA1 (agricultural fields); foraging
Non-breeding	10/12/2015	Derryarkin	Whooper Swan	11	GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	05/01/2016	Derryarkin	Whooper Swan	68	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	27/01/2016	Derryarkin	Whooper Swan	88	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	19/02/2016	Derryarkin	Whooper Swan	119	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Both (overlap)	02/03/2016	Derryarkin	Whooper Swan	132	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Both (overlap)	30/03/2016	Derryarkin	Whooper Swan	111	PB4 (wet bare peat); GA1 (agricultural grassland); feeding (roost at Roundstone quarry pond or quarry ponds at Drumman bog)
Non-breeding	21/12/2013	Derrycricket	Little Egret	1	WD4 (conifer plantation); flew over the forest edge at dusk and may possibly have roosted in a mature tree here
Non-breeding	25/10/2013	Esker	European Golden Plover	30	PB4 (bare peat); landed for 15mins then flew NE of the site
Non-breeding	19/11/2013	Esker	European Golden Plover	150	flew high over the SW sector of the site in a NW direction
Non-breeding	19/11/2013	Esker	Common Snipe	4	PB1 (marginal remnant high bog); flushed
Non-breeding	08/02/2014	Esker	Whooper Swan	5	flew W across site at 30m

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Both (overlap)	09/03/2014	Esker	European Golden Plover	100	circled over the site and drifted E
Non-breeding	30/09/2015	Esker More	European Golden Plover	1+	bog; auditory records and 1 seen flying a short distance SE at 15m high
Non-breeding	30/09/2015	Esker Stream	Grey Heron	1	river; flying along - seen from Newtown Bridge
Breeding	Breeding season 2013	Glashabaun North	Common Moorhen	1+	possible breeder
Non-breeding	23/02/2013	Glashabaun North	Northern Lapwing	12	flew SE over the site
Non-breeding	06/10/2013	Glashabaun North	Northern Lapwing	9	flew E across site
Non-breeding	19/10/2013	Glashabaun North	European Golden Plover	100+	PB4 (bare peat); roosting and then flew SE
Non-breeding	19/10/2013	Glashabaun North	Eurasian Curlew	77	flew S over site
Non-breeding	20/10/2013	Glashabaun North	European Golden Plover	15	flew SW over site
Non-breeding	04/11/2013	Glashabaun North	Northern Lapwing	18	flew SW across site
Non-breeding	22/11/2013	Glashabaun North	Water Rail	3	flew SE over site
Non-breeding	07/12/2013	Glashabaun North	Northern Lapwing	26	moved slowly over the site in a W direction
Non-breeding	Winter season 2013/14	Glashabaun North	Common Snipe	<3	present
Non-breeding	10/01/2014	Glashabaun North	European Golden Plover	11	flew SW over site
Non-breeding	27/01/2014	Glashabaun North	Eurasian Curlew	5	flew NE over site
Non-breeding	10/02/2014	Glashabaun North	European Golden Plover	50	flew NW high over the site
Both (overlap)	14/03/2014	Glashabaun North	European Golden Plover	12	PB4 (bare peat); resting and then flew NE
Breeding	Breeding season 2013	Glashabaun South	Mallard	1+	PB4&WS1 (regenerating bog with dry vegetation and scrub); probably breeding on site

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Non-breeding	20/10/2013	Glashabaun South	European Golden Plover	18	flew SW over site
Both (overlap)	03/11/2013	Glashabaun South	Northern Lapwing	11	flew E over site
Non-breeding	23/12/2013	Glashabaun South	Northern Lapwing	14	flew low over site in a SW direction
Non-breeding	Winter season 2013/14	Glashabaun South	Common Snipe	<5	present
Non-breeding	28/01/2014	Glashabaun South	European Golden Plover	20	flew high over site in an E direction
Non-breeding	12/02/2014	Glashabaun South	Northern Lapwing	9	flew W over site
Non-breeding	25/02/2014	Glashabaun South	European Golden Plover	15	flew NE over site
Breeding	Breeding season 2014	Glashabaun South	Mallard	2+	pair observed in suitable nesting habitat - probable breeding
Breeding	May-14	Glashabaun South	Common Snipe	1	PB4 (regenerating bog); displaying
Breeding	May-14	Glashabaun South	Common Snipe	1+	PB4 (regenerating bog); displaying
Breeding	Apr-13	Lough Aisling	Little Grebe	2	FL8 (artificial fishing pond); pair displaying
Breeding	Breeding season 2013	Lough Aisling	Mute Swan	2	FL8 (artificial fishing pond); pair breeding
Non-breeding	Winter season 2013/14	Lough Aisling	Eurasian Teal	<5	FL8 (artificial fishing pond); present
Breeding	Breeding season 2014	Lough Aisling	Mute Swan	2	FL8 (artificial fishing pond); confirmed breeding pair
Breeding	Breeding season 2015	Lough Aisling	Mute Swan	2	FL8 (artificial fishing pond); pair present but no evidence of breeding
Non-breeding	Jan-13	Raheen Lough	Whooper Swan	14	roosting
Breeding	Breeding season 2013	Ticknevin Bog	Common Snipe	2	PB1 (remnant high bog); displaying birds in W sector of site

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Non-breeding	24/10/2013	Ticknevin Bog	European Golden Plover	30	circled over the site and moved SW
Non-breeding	05/11/2013	Ticknevin Bog	European Golden Plover	60	PB4 (bare peat); landed and later flew S
Non-breeding	17/11/2013	Ticknevin Bog	Northern Lapwing	17	flew E across the site
Non-breeding	23/11/2013	Ticknevin Bog	Common Snipe	23	PB1 (remnant high bog); flushed in W sector
Non-breeding	23/11/2013	Ticknevin Bog	Jack Snipe	2	PB1 (remnant high bog); flushed in W sector
Non-breeding	Winter season 2013/14	Ticknevin Bog	Common Snipe	1	present
Non-breeding	27/01/2014	Ticknevin Bog	European Golden Plover	12	flew SW over site
Non-breeding	27/01/2014	Ticknevin Bog	Jack Snipe	1	PB1 (remnant high bog); flushed in W sector
Non-breeding	24/02/2014	Ticknevin Bog	European Golden Plover	18	flew W over site
Non-breeding	24/02/2014	Ticknevin Bog	Eurasian Curlew	11	flew NW over the site
Non-breeding	27/02/2014	Ticknevin Bog	Northern Lapwing	14	flew S across the site
Breeding	Breeding season 2014	Ticknevin Bog	Common Snipe	3	displaying birds at W end of site - probable breeding
Breeding	Breeding season 2014	Ticknevin Bog	Mallard	1+	bird observed in suitable breeding habitat - possible breeding
Breeding	Breeding season 2014	Ticknevin Bog	Common Snipe	3	displaying in W sector of site
Breeding	Breeding season 2014	Ticknevin Bog	Mallard	1+	observed in suitable breeding habitat - possible breedings

Habitat codes follow Fossitt (2000) *A guide to habitats in Ireland*. Kilkenny: the Heritage Council

**Table 1 Wetland waterbird counts - winter 2015/16**

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Non-breeding	30/09/2015	Philipstown River	Grey Heron	2	river; auditory record - 2 flying along river
Non-breeding	30/11/2015	Lough Aisling	Grey Heron	1	FL8 (artificial fishing pond); perched
Non-breeding	18/12/2015	Cloncant Bog	Whooper Swan	20	PB4 (bare peat); foraging
Non-breeding	05/01/2016	Ballycon	Whooper Swan	19	PB4&WS1 (regenerating cutaway bog wetland with developing heath and scrub); feeding
Non-breeding	27/01/2016	Ballycon	Whooper Swan	5	PB4&WS1 (regenerating cutaway bog wetland with developing heath and scrub); feeding
Non-breeding	25/02/2016	Cloncrane (lands adjacent to River Philipstown)	Greylag Goose	2	GA1 (improved agricultural grassland); foraging
Non-breeding	25/02/2016	Cloncrane (lands adjacent to River Philipstown)	European Golden Plover	1200	GA1 (improved agricultural grassland); foraging and flushed
Non-breeding	25/02/2016	Cloncrane (lands adjacent to River Philipstown)	Mute Swan	2	GA1 (improved agricultural grassland); foraging
Non-breeding	25/02/2016	Cloncrane (lands adjacent to River Philipstown)	Whooper Swan	16	GA1 (improved agricultural grassland); foraging
Both (overlap)	02/03/2016	Ballycon	Whooper Swan	3	PB4&WS1 (regenerating cutaway bog wetland with developing heath and scrub); feeding
Both (overlap)	29/03/2016	Clonbulloge Village and surrounds)	European Golden Plover	20	flew over
Both (overlap)	29/03/2016	Lough Aisling	Grey Heron	1	FL8 (artificial fishing pond); perched
Both (overlap)	29/03/2016	Lough Aisling	Common Moorhen	1	FL8 (artificial fishing pond); swimming
Breeding	22/05/2016	Ballycon Fen	Grey Heron	1	present
Breeding	22/05/2016	Ballycon Fen	Mallard	5	includes 2 pairs in suitable breeding habitat - probably breeding
Breeding	22/05/2016	Ballycon Fen	Common Moorhen	2	in suitable breeding habitat - possibly breeding

Season	Date	Location	Species	Number of birds	Notes on habitat and activity
Breeding	22/05/2016	Ballycon Fen	Common Snipe	2	WS1 (willow birch scrub); PB4 (bare peat); drumming display - probably breeding
Breeding	22/05/2016	Philipstown River	Mute Swan	1	individual in suitable breeding habitat - possibly breeding
Non-breeding	01/09/2016	Cloncreen (Philipstown river)	Mute Swan	5	Pair of mute swans with three signets.

Habitat codes follow Fossitt (2000) A Guide to Habitats in Ireland. Kilkenny: The Heritage Council

**Table 2 vantage point watch survey records – winter 2013/14 & 2015/16 and summer 2015 & 2016**

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
	30/03/2016	2	Both (overlap)	Barn Swallow	1	14:33						PB4 (bare peat); perched in front of VP2
	01/12/2015	1	Non-breeding	Blue Tit	1	11:45						WL2 (treeline vegetation); calls from marginal vegetation
	20/10/2015	1	Non-breeding	Chaffinch	1	14:44						WS1 (scrub); PB4 (bare peat); WL2 (treeline); fly over VP1, calling
	21/10/2015	2	Non-breeding	Chaffinch	1	08:15						PB4 (bare peat); WS1 (birch scrub); fly over scrub in front of VP2
	21/10/2015	2	Non-breeding	Chaffinch	1	12:43						WS1 (birch scrub); perched on bush in scrub left of VP2
	29/03/2016	1	Both (overlap)	Chaffinch	2	07:18						WS1 (scrub); WL2 (treeline); calls and song audible throughout survey duration

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
	29/03/2016	1	Both (overlap)	Chaffinch	2	10:31						WS1 (scrub); WL2 (treeline); calling and moving between scrub and treeline
	29/03/2016	1	Both (overlap)	Chaffinch	1	11:46						WL2 (treeline vegetation); singing N of VP
	30/03/2016	2	Both (overlap)	Chaffinch	1	16:52						calling
	24/02/2016	1	Non-breeding	Chaffinch	2	12:01						WN7 (bog woodland); calling in woodland
	24/02/2016	1	Non-breeding	Chaffinch	1	14:32						calling from perimeter of study area in trees
	25/02/2016	2	Non-breeding	Chaffinch	1	07:59						WS2 (mature birch willow scrub); singing
	29/03/2016	1	Both (overlap)	Common Blackbird	1	07:10						WL2 (marginal treeline vegetation); alarm calls audible
	29/03/2016	1	Both (overlap)	Common Blackbird	1	12:10						WL2 (marginal treeline vegetation); barking and chakking calls
	30/03/2016	4&5	Both (overlap)	Common Blackbird	1	18:30						WS2 (mature birch willow scrub); perched on tree
	30/09/2015	1	Non-breeding	Common Blackbird	2							observed
	20/10/2015	1	Non-breeding	Common Blackbird	1	12:36						WL2 (treeline vegetation); alarm calls
	20/10/2015	1	Non-breeding	Common Blackbird	1	15:32						WL2 (treeline vegetation); subsong from study area boundary vegetation/treeline

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
	01/12/2015	1	Non-breeding	Common Blackbird	1	08:20						WL2 (treeline vegetation); subsong and alarm calls from vegetation
	01/12/2015	1	Non-breeding	Common Blackbird	1	11:41						WL2 (treeline vegetation); subsong from study area boundary vegetation/treeline
	01/12/2015	1	Non-breeding	Common Blackbird	1	12:44						WL2 (treeline vegetation); subsong from study area boundary vegetation/treeline
	17/12/2015	2	Non-breeding	Common Blackbird	1	08:57						offsite - audible singing behind VP
	17/12/2015	2	Non-breeding	Common Blackbird	1	12:19						offsite - subsong audible from behind VP
	30/03/2016	4&5	Both (overlap)	Common Blackbird	1	19:14						WS2 (mature birch willow scrub); audible singing
	27/01/2016	1	Non-breeding	Common Blackbird	1	10:18						WS1 (scrub); WL2 (treeline); flies out of scrub and into marginal vegetation
	27/01/2016	1	Non-breeding	Common Blackbird	1	11:52						WL2 (treeline vegetation); alarm calls from marginal treeline
	13/10/2013	1	Non-breeding	Common Buzzard	1	11:10	300			300		WN7 (bog woodland); flying and circling near SW boundary and trees, 50-100m high. Not considered target species at time of survey - flightline

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
												not mapped
	07/11/2013	4&5	Non-breeding	Common Buzzard	1	08:55	1620	540	540	540		present in SE sector of study area, 0-100m high. Not considered target species at time of survey - flightline not mapped
	14/01/2014	4&5	Non-breeding	Common Buzzard	1	09:15	120	40	40	40		flying along NE margin, 0-50m high. Not considered target species at time of survey - flightline not mapped
	24/02/2014	4&5	Non-breeding	Common Buzzard	3	16:15	2100			2100		circling over S half of study area for 35mins with some displaying, 50-150 m high. Not considered target species at time of survey - flightline not mapped
	19/03/2014	4&5	Both (overlap)	Common Buzzard	2	11:06	660			660		pair displaying over SW boundary of study area, 50-100m high. Not considered target species at time of survey - flightline not mapped
	30/03/2014	4&5	Both (overlap)	Common Buzzard	1	14:56	420			210	210	soaring for 7mins, 100-200m high. Not considered target species at time of survey -

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
												flightline not mapped
	24/03/2015	4&5	Both (overlap)	Common Buzzard	1	11:04	120	40	40	40		displaying over N boundary of study area. Not considered target species at time of survey - flightline not mapped
	14/04/2015	4&5	Breeding	Common Buzzard	2	09:13	300			300		pair over NW sector of study area, 50-150m high. Not considered target species at time of survey - flightline not mapped
	14/05/2015	2	Breeding	Common Buzzard	3	16:40	360			360		soaring over N boundary of study area, 50-100m high. Not considered target species at time of survey - flightline not mapped
	11/06/2015	2	Breeding	Common Buzzard	2	17:04	120		60	60		soaring over N boundary of study area , 20-100m high. Not considered target species at time of survey - flightline not mapped
	14/07/2015	2	Breeding	Common Buzzard	4	09:56	300		150	150		party of four flying and soaring over N end of study area, 20-100m high. Not considered target species at time of survey - flightline

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
												not mapped
	24/07/2015	4&5	Breeding	Common Buzzard	2	08:27	90			90		moving S within study area, 50-100m high. Not considered target species at time of survey - flightline not mapped
	20/08/2015	2	Breeding	Common Buzzard	1	17:07	90	30	30	30		PB4 (bare peat); flying 0-50m high, landed on bare peat and remained perched for at least 15mins. Not considered target species at time of survey - flightline not mapped
105	20/10/2015	1	Non-breeding	Common Buzzard	1	17:25	25		25			WL2 (treeline vegetation); circling approximately 30m high then drops into treeline on N boundary
	20/10/2015	1	Non-breeding	Common Buzzard	1	12:40						offsite - heard calling off study area to W/SW. Not considered target species at time of survey - flightline not mapped
	20/10/2015	1	Non-breeding	Common Buzzard	1	16:00						offsite - likely a BZ, far off-study area to the N, circling above 100m. Flight lasts 150 seconds but too distance to map

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
106	21/10/2015	2	Non-breeding	Common Buzzard	1	08:31						offsite - in distance, flying around powerstation for 20 seconds
107	21/10/2015	2	Non-breeding	Common Buzzard	2	08:50						offsite - soaring beyond powerstation for 15 seconds
108	22/10/2015	4&5	Non-breeding	Common Buzzard	1	14:10	60		60			PB4 (bare peat); WL2 (treeline); circling and calling over VP4/5 at 10m, then flies away towards powerstation gaining height. Flight lasts 75 seconds, 60 of which are in study area
	22/10/2015	4&5	Non-breeding	Common Buzzard	2	12:05						GA1 (agricultural fields); calling from N, not visible
	22/10/2015	4&5	Non-breeding	Common Buzzard	3	12:30						offsite - soaring off map, off-study area to SW of Cloncreen for 30 seconds. Too distant to map
109	16/12/2015	4&5	Non-breeding	Common Buzzard	1	12:47						offsite - circling over field for 10 seconds, off study area to N
	27/01/2016	1	Non-breeding	Common Buzzard	1	12:34	60			60		PB4 (bare peat); soaring around new mast at 60-100m

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
129	24/02/2016	1	Non-breeding	Common Buzzard	1	14:05	90	90				PB4 (bare peat with pioneer dry grassland and pioneer poor fen mosaic); WD4 (conifer trees); flew 6m high over bare peat into conifer treeline in the NW part of the study area. Observed commuting through study area
130	25/02/2016	4&5	Non-breeding	Common Buzzard	1	08:36	40	40				WS1 (birch scrub); foraging and hunting in new birch scrub at 2-4m high. Stopped and perched on "Bogdeal" for 10mins
131	25/02/2016	4&5	Non-breeding	Common Buzzard	1	13:11	20	20				PB1 (remnant high bog); foraging and commuting over raised bog at 4-6m high. Observed for 120 seconds, 20 of which were in the study area boundary
100	30/03/2016	2	Both (overlap)	Common Buzzard	3	13:57	30	30				flying over the study area. 90 seconds flight outside study area boundary, 30 seconds within
101	30/03/2016	2	Both (overlap)	Common Buzzard	1	14:59	115	5	110			WN7 (bog woodland); flying over N boundary at 8-15m. 115

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
												seconds in study area
102	30/03/2016	2	Both (overlap)	Common Buzzard	1	15:04	5			5		PB4 (bare peat); flying over S boundary at 30-40m high, within study area for 5 seconds
103	30/03/2016	2	Both (overlap)	Common Buzzard	1	16:42						offsite - circling powerstation
104	30/03/2016	2	Both (overlap)	Common Buzzard	1	17:02	40		20	20		PB4 (bare peat); flying 10-30m high
110	27/04/2016	2	Breeding	Common Buzzard	2	10:55	40			20	20	PB1 (bare peat); WD4 (conifer plantation); soaring over bog and forestry on and off site. Flight lasts 90 seconds, 40 seconds of which are within study area
111	28/04/2016	1	Breeding	Common Buzzard	2	16:31	560				560	soaring for 14mins. Flight lasts 840 seconds, 560 seconds of which are within study area
112	22/05/2016	1	Breeding	Common Buzzard	2	16:11	284			284		PB4 (bare peat); flying E at steady 100-125m
113	22/05/2016	1	Breeding	Common Buzzard	2	16:11	284	0	284	0		
114	23/05/2016	2	Breeding	Common Buzzard	1	10:13	236			56	180	PB4 (bare peat); rising on thermals and descending behind treeline. Flight lasts 246 seconds, 236 seconds of which

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												are within study area
115	24/05/2016	4&5	Breeding	Common Buzzard	1	16:53						offsite - rising on thermals and descending behind treeline for 222 seconds
116	24/05/2016	4&5	Breeding	Common Buzzard	1	20:03						offsite - flying over bare peat and grassland for 47 seconds at 25-175m
117	24/05/2016	4&5	Breeding	Common Buzzard	1	20:32	5			5		PB1 (remnant bog); BL3 (ESB wire); flying over high bog for 93 seconds. Crosses study area for 5 seconds. Perches on ESB wire
118	14/06/2016	2	Breeding	Common Buzzard	1	21:13	36	36				PB4 (bare peat); hunting over bare peat at approximately 5m high
119	14/06/2016	2	Breeding	Common Buzzard	1	22:22	32	16	16			PB4 (bare peat); leaves peat mound perch and flies NE
120	15/06/2016	4&5	Breeding	Common Buzzard	1	07:56	62	31	31			PB4 (bare peat); WS1 (birch willow scrub); observed in flight. 62 seconds within study area
121	15/06/2016	4&5	Breeding	Common Buzzard	1	11:41						offsite - hunting over remnant high bog, bare peat and agricultural grassland for 114 seconds. 24

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
												seconds spent at a height of 25-175m and 90 seconds flying above 175m
122	15/06/2016	4&5	Breeding	Common Buzzard	1	12:07						offsite - flying over remnant high bog, bare peat and grassland to perch on ESB pylon
123	11/07/2016	4&5	Breeding	Common Buzzard	1	15:48	489	0	0	174	315	PB1 (Raised bog), PB4 (Cutover bog), WS1 (Scrub, WD4 (Conifer plantation); Soaring on thermals on and off site - flying out of view shed.
124	11/07/2016	4&5	Breeding	Common Buzzard	2	16:41	492	0	2	15	480	G (Grassland and marsh), PB4 (Cutover bog), WS1 (Scrub, WD4 (Conifer plantation). Pair soaring over habitat on and off site. calling briefly (t)
125	13/07/2016	2	Breeding	Common Buzzard	1	12:31	46	15	31	0	0	G (Grassland and marsh), WD4 (Conifer plantation). Hunting over grassland off site
126	11/08/2016	4&5	Breeding	Common Buzzard	4	13:27	283	0	0	118	165	G (Grassland and marsh). Possibly a family group, soaring in distance over grassland (off site)

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
132	08/07/2016	1	Breeding	Common Buzzard	1	13:51	749	0	4	390	375	
127	12/08/2016	2	Breeding	Common Buzzard	1	15:33	89	0	14	75	0	G (Grassland and marsh), PB4 (Cutover bog), WD4 (Conifer plantation). Flying over (off site)
133	08/07/2016	1	Breeding	Common Buzzard	1	15:12	382	0	0	0	382	WS1 (Scrub), PB4 (Cutover bog), G (Grassland and Marsh). Soaring on thermals in SE direction before flying out of viewshed
	23/05/2016	2	Breeding	Common Cuckoo	1	05:14						PB4 (bare peat); chased by songbirds through trees
	23/05/2016	2	Breeding	Common Cuckoo	1	08:56						PB4 (bare peat); bubbling female call heard
	24/05/2016	4&5	Breeding	Common Cuckoo	2	21:48	43	43				PB4 (bare peat); WS2 (birch willow woodland); pair flying E at approximately 10m high over bare peat, heath and woodland
	14/06/2016	2	Breeding	Common Cuckoo	1	20:43						WS1 (birch willow scrub); male - flying into scrub

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												and singing from perch
199	08/07/2016	1	Breeding	Common Kestrel	1	10:15	316	106	210	0	0	
168	04/08/2016	1	BR	Common Kestrel	1	15:11	127	106	195	0	0	WS1 (Scrub). Hunting on site
	08/10/2013	1	Non-breeding	Common Kestrel	1	15:12	60	20	20	20		hunting within study area, 0-50 m high. Not considered target species at time of survey - flightline not mapped
	13/10/2013	1	Non-breeding	Common Kestrel	1	10:08	120	40	40	40		PB1 (remnant high bog); hunting - successful strike over bog, 0-50m high. Not considered target species at time of survey - flightline not mapped
	14/10/2013	4&5	Non-breeding	Common Kestrel	1	11:18	180	60	60	60		hunting near VP4/5, 0-50 m high. Not considered target species at time of survey - flightline not mapped
	07/11/2013	2	Non-breeding	Common Kestrel	1	16:18	120	40	40	40		hunting along margins of study area, 0-50m high. 40 seconds within study area. Not considered target species at time of survey - flightline not mapped

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
	16/11/2013	1	Non-breeding	Common Kestrel	2	09:46	660	220	220	220		hunting in SW sector of study area for 11mins, 0-50 m high. Not considered target species at time of survey - flightline not mapped
	08/12/2013	4&5	Non-breeding	Common Kestrel	1	13:16	180	60	60	60		hunting over central part of study area, 0-50m high. Not considered target species at time of survey - flightline not mapped
	12/01/2014	2	Non-breeding	Common Kestrel	1	15:22	300	100	100	100		hunting for 5mins, 0-50m high. Not considered target species at time of survey - flightline not mapped
	27/02/2014	2	Non-breeding	Common Kestrel	1	07:55	90	30	30	30		hunting within study area, 0-50m high. Not considered target species at time of survey - flightline not mapped
	14/03/2014	1	Both (overlap)	Common Kestrel	1	16:03	360	120	120	120		hunting along margin of study area in SW for 6mins, 0-50m high. Not considered target species at time of survey - flightline not mapped
	25/03/2014	1	Both (overlap)	Common Kestrel	1	07:50	1200	400	400	400		hunting within study area, 0-50 m high. Not

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												considered target species at time of survey - flightline not mapped
	27/03/2015	4&5	Both (overlap)	Common Kestrel	2	13:22	1380	460	460	460		pair loosely together flying, soaring and hunting in study area. Some display behaviour. Not considered target species at time of survey - flightline not mapped
	13/04/2015	2	Breeding	Common Kestrel	1	08:57	120	40	40	40		ED2&FL8 (disused flooded quarry); hunting over disused gravel pit, 0-50m high. Not considered target species at time of survey - flightline not mapped
	15/04/2015	1	Breeding	Common Kestrel	1	08:34	180	60	60	60		PB4 (bare peat); hunting over cutaway peat near VP1, 0-50m high. Not considered target species at time of survey - flightline not mapped
	16/04/2015	4&5	Breeding	Common Kestrel	2	14:40	600	200	200	200		pair in SE of study area flying and hunting, 0-100m high. Not considered target species at time of survey - flightline not mapped

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	04/06/2015	1	Breeding	Common Kestrel	1	08:32	90	30	30	30		flew W out of study area, 0-50m high. 90 seconds within study area. Not considered target species at time of survey - flightline not mapped
	11/06/2015	2	Breeding	Common Kestrel	1	16:25	30	10	10	10		PB4 (bare peat); male flew in 0-50m high and perched on ground - picking at possible prey item. Not considered target species at time of survey - flightline not mapped
	29/07/2015	1	Breeding	Common Kestrel	3	10:48	240	80	80	80		probable family party hunting, 0-100m high. Not considered target species at time of survey - flightline not mapped
	10/08/2015	2	Breeding	Common Kestrel	1	11:01	120	40	40	40		ED2&FL8 (disused flooded quarry); hunting over quarry and works area, 0-50m high. Not considered target species at time of survey - flightline not mapped
139	21/08/2015	4&5	Breeding	Common Kestrel	1	11:55	1080	360	360	360		female hunting in SE corner of study area, 0-50m high. Not considered target species at time of survey -

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												flightline not mapped
140	30/09/2015	2	Non-breeding	Common Kestrel	1	16:41	240		240			PB4 (bare peat with pioneer dry grassland); hunting over regenerated patch of cutaway close to meteorological tower, 10-25m high
141	30/09/2015	2	Non-breeding	Common Kestrel	1	16:45	1620		810	810		PB4 (bare peat with pioneer dry grassland); went between perching on meteorological tower to hunting near communications tower, 10-100m high
142	30/09/2015	2	Non-breeding	Common Kestrel	1	18:20	1200		600	600		PB4 (bare peat with pioneer dry grassland); hunting over regenerated cutaway. Flew to perch on communications tower close to tea hut
143	30/09/2015	1	Non-breeding	Common Kestrel	1	18:31	8	8				Kestrel flew W after tussle with Peregrine, below 10m
144	30/09/2015	2	Non-breeding	Common Kestrel	1	19:20	360		180	180		BL3 (meteorological mast); calling from perch atop of mast. Flew to another

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												perch and called
145	20/10/2015	1	Non-breeding	Common Kestrel	1	13:02	30	15	15			WL2 (treeline vegetation); circling over treeline to N of VP1 along study area boundary, 8-20m
146	20/10/2015	1	Non-breeding	Common Kestrel	1	13:10	20	5	15			WL2 (treeline vegetation); hunting over treeline to N of VP1, 8-15m
147	20/10/2015	1	Non-breeding	Common Kestrel	1	13:12	240		120	120		WL2 (treeline vegetation); same individual as above hunting over treeline to N of VP1, 20-30m
148	20/10/2015	1	Non-breeding	Common Kestrel	1	13:23	100		50	50		WL2 (treeline vegetation); same individual as above hunting over treeline to N of VP1, 20-30m. Flight lasts 200 seconds, and is within study area for 100 seconds
149	21/10/2015	2	Non-breeding	Common Kestrel	1	08:20	10		10			WL2 (treeline vegetation); flying at 25m and dips into treeline left of VP2
150	21/10/2015	2	Non-breeding	Common Kestrel	1	11:53	150		130	20		PB4 (bare peat with pioneer dry grassland); BL3 (works area); hunting around vegetation around N mast and chasing

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												passerine
151	21/10/2015	2	Non-breeding	Common Kestrel	1	12:30	120	30	45	45		PB4 (bare peat); WN7 (bog woodland); hunting along treeline up to 30m, moves into cut peat and lands
152	21/10/2015	2	Non-breeding	Common Kestrel	1	12:44	40		20	20		WL2 (treeline vegetation); hunting over treeline to left of VP2
153	21/10/2015	2	Non-breeding	Common Kestrel	1	12:51	35	5	15	15		WL2 (treeline vegetation); hunting along treeline at N mast, 20-30m
154	21/10/2015	2	Non-breeding	Common Kestrel	1	14:10	40	10	30			WL2 (treeline vegetation); hunting along treeline to S of VP2, up to 12m
155	22/10/2015	4&5	Non-breeding	Common Kestrel	1	15:20	10		10			PB4 (bare peat); flying over bare peat to E and over VP4/5, at 15m. Spends 10 seconds within study area
156	22/10/2015	4&5	Non-breeding	Common Kestrel	1	16:46	90	15	75			WS1 (scrub); WL2 (treeline); hunting to N of railway following tree and shrubline, up to 15m
157	16/12/2015	4&5	Non-breeding	Common Kestrel	1	13:35	30	30				PB4 (bare peat); flying low over bare peat and perches on pile for 2 mins

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158	16/12/2015	4&5	Non-breeding	Common Kestrel	1	13:37	10	10				PB4 (bare peat); same individual as above leaves peat pile and flies E out of sight
159	16/12/2015	4&5	Non-breeding	Common Kestrel	1	15:20	10	10				PB1 (remnant high bog); ED5 (concrete pipe); hunting in heather behind VP up to 15m, then moves W into study area lands on concrete pipe for 10 mins. Flight lasts 120 seconds, 10 seconds of which are within the study area
160	16/12/2015	4&5	Non-breeding	Common Kestrel	1	15:30	30	30				WS2 (mature birch willow scrub); same individual as above leaves pipe and flies W towards vegetation
161	17/12/2015	2	Non-breeding	Common Kestrel	1	08:19	10	10				WL2 (treeline vegetation); hunting over treeline near railway
162	17/12/2015	2	Non-breeding	Common Kestrel	1	14:29	30		30			WN7 (bog woodland); hunting over trees to N of study area, 30m
163	21/12/2015	1	Non-breeding	Common Kestrel	1	14:51	240	225	15			PB4 (bare peat); WS1 (birch scrub); hunting over bare peat and scrub and trees to N of VP, up to 20m

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
164	21/12/2015	1	Non-breeding	Common Kestrel	1	15:46	60		60			PB4 (bare peat with pioneer dry grassland and pioneer poor fen mosaic); hunting around S mast, at 20-25m
165	21/12/2015	1	Non-breeding	Common Kestrel	1	16:17	180		120	60		PB4 (bare peat with pioneer dry grassland); hunting a passerine, flies high up to 60m
185	27/01/2016	1	Non-breeding	Common Kestrel	1	08:31	10	10				WS1 (scrub); WL2 (treeline); flies out of treeline marginal vegetation into study area from W and perches on conifer tree in area of scrub in from of VP, 7m
186	27/01/2016	1	Non-breeding	Common Kestrel	1	13:53	20	20				WS1 (scrub); WL2 (conifer tree in treeline); PB4 (bare peat with pioneer dry grassland); flies out from scrub, perches on conifer for 1 minute and then flies N to land on bare peat with some regenerating grass, 7m
187	28/01/2016	4&5	Non-breeding	Common Kestrel	1	15:27	120			120		PB4 (bare peat); hovering over habitats dominated by bare peat and some recolonising

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												bog plants and foraging over N mast at approximately 30m high
188	28/01/2016	2	Non-breeding	Common Kestrel	1	12:41	20			20		WN7 (bog woodland); flies over trees and N, out of view. Commuting at 35m, not hunting
189	28/01/2016	4&5	Non-breeding	Common Kestrel	1	16:20	120			120		foraging along S boundary of study area over habitats dominated by raised bog and cutover bog
190	28/01/2016	2	Non-breeding	Common Kestrel	1	15:35	40	40				PB4 (bare peat) ; flies in from N, approximately 9m high, past VP and perches on peat. Sits briefly and continues flying S
191	28/01/2016	2	Non-breeding	Common Kestrel	1	15:40	20	20				BL3 (fencepost); individual from before flies W, perches on a post and continues flying S
192	28/01/2016	2	Non-breeding	Common Kestrel	1	15:50	120	45	75			ED2 (disused gravel pit); hunting over gravel pit, then flies W, approximately 3m high and over the quarry, out of view. Flight lasts 130 seconds, 120 seconds are within study area

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
193	28/01/2016	2	Non-breeding	Common Kestrel	1	15:59	40		40			ED2&FL8 (disused flooded quarry and disused gravel pit); same individual leaves the quarry and returns to hunting over the gravel pit
194	25/02/2016	2	Non-breeding	Common Kestrel	1	10:34	35	10	25			PB4 (bare peat); PB1 (remnant high bog); flies in from W, around in a loop and out of study area again at 15-25m. Hovers briefly over heather
195	25/02/2016	2	Non-breeding	Common Kestrel	1	12:18	15	15				WL2 (treeline); ED2 (disused gravel pit); perched on young tree next to gravel pit then flies S and out of view over pit
196	25/02/2016	2	Non-breeding	Common Kestrel	1	12:45	100	100				WL2 (treeline); ED2 (disused gravel pit); flies up to perch on young tree, rests and flies into pit again (likely same individual)
197	25/02/2016	2	Non-breeding	Common Kestrel	1	12:59	200	200				ED2 (disused gravel pit); BL3 (fencepost); perched on top of timber post next to gravel pit for 3mins, then flies into pit (likely same individual)

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
198	25/02/2016	2	Non-breeding	Common Kestrel	1	13:23	95	95				ED2 (disused gravel pit); PB1 (remnant high bog); takes off from timber post and hovers over gravel pit then flies W over heather and off study area
	25/02/2016	2	Non-breeding	Common Kestrel	1	13:10						ED2 (disused gravel pit); BL3 (fencepost); perched on timber post beside gravel pit for 13 mins, preening (likely same individual)
134	29/03/2016	1	Both (overlap)	Common Kestrel	1	13:13	20		20			WL2 (treeline vegetation); scanning along S boundary at approximately 20m high
135	30/03/2016	2	Both (overlap)	Common Kestrel	1	13:43	10		10			WN7 (bog woodland); hovering and flying 20m over woodland to the E. 10 seconds spent within study area
136	30/03/2016	2	Both (overlap)	Common Kestrel	1	14:56	150		75	75		PB4 (bare peat); flying 20-40m high, commuting. circling and flying
137	30/03/2016	4&5	Both (overlap)	Common Kestrel	1	18:46	30			30		PB1 (remnant high bog); flying 50-120m high, hunting over heather and perches in tree. 30 seconds of flight spent within study

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												area
138	30/03/2016	4&5	Both (overlap)	Common Kestrel	1	18:52						offsite - leaves tree and hunts again over heather at 40m. Drops to perch on telegraph pole
169	29/04/2016	4&5	Breeding	Common Kestrel	1	06:53	60		60			hunting
170	29/04/2016	4&5	Breeding	Common Kestrel	1	10:31						offsite - hunting just outside E boundary of study area for 45 seconds
171	22/05/2016	1	Breeding	Common Kestrel	1	21:08	89		29	60		PB4 (bare peat); WS2 (birch willow scrub); hunting
172	24/05/2016	4&5	Breeding	Common Kestrel	1	16:33						offsite - hunting over birch scrub and agricultural grassland for 33 seconds
173	24/05/2016	4&5	Breeding	Common Kestrel	1	20:15						offsite - hunting over grassland and scrub for 19 seconds. 4 seconds at 10-25m and 15 seconds at 25-175m
174	24/05/2016	4&5	Breeding	Common Kestrel	1	21:43	138		30	108		PB4 (bare peat); WS2 (birch willow scrub); hunting over bare peat and birch willow scrub
175	14/06/2016	2	Breeding	Common Kestrel	1	16:14	49	7	8	34		WS1 (birch willow scrub); PB4 (bare peat); male - flying at approximately

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
												5m high through scrub
176	15/06/2016	4&5	Breeding	Common Kestrel	1	09:11	95		14	56	25	PB4 (bare peat); hunting and flying on and off site to the SW. Flight lasts 286 seconds in total, 95 seconds of which are within study area
177	15/06/2016	4&5	Breeding	Common Kestrel	1	10:26	222	24	25	143	30	PB1 (remnant high bog); WS1 (birch scrub); PB4 (bare peat); hunting on and off site. Flight lasts 668 seconds in total. Approximately 222 seconds are spent in flight within study area
178	15/06/2016	4&5	Breeding	Common Kestrel	1	10:43	143	16	17	100	10	PB1 (remnant high bog); WS1 (birch scrub); PB4 (bare peat); hunting on and off site. Flight lasts 431 seconds in total and approximately 143 seconds are spent within the study area boundary
179	15/06/2016	4&5	Breeding	Common Kestrel	1	11:23	10			10		PB1 (remnant high bog); hunting off site, and briefly crosses study area boundary. Flight lasts 796 seconds in total, with 46 seconds at a height of 0-25m, 585

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
												seconds at a height of 25-175m and 75 seconds above 175m. Approximately 10 seconds are spent within study area boundary
180	11/07/2016	4&5	Breeding	Common Kestrel	1	16:15	286	61	90	135	0	PB4 (Cutover bog). Flying over habitat and landing on boundary of cutover and raised bog (on site). No prey item
181	11/07/2016	4&5	Breeding	Common Kestrel	1	18:16	22	0	22	0	0	PB1 (Raised bog), WD4 (Conifer plantation). Flying over. No prey items
182	13/07/2016	2	Breeding	Common Kestrel	1	12:11	352	307	15	30	0	PB4 (Cutover bog), WS1 (Scrub), BL3 (Roads). Hunting on site but no prey items
167	04/08/2016	1	BR	Common Kestrel	1	16:29	62	15	30	17		WS1 (Scrub). Hunting and finally diving into habitat on site
166	04/08/2016	1	BR	Common Kestrel	1	18:31	47	2	30	15		WS1 (Scrub). Hunting on site diving for prey and remains in WS1 scrub
183	11/08/2016	4&5	Breeding	Common Kestrel	1	08:51	187	7	105	75	0	PB1 (Raised bog), PB4 (Cutover bog). Male hunting: dives for prey (off site)
184	11/08/2016	4&5	Breeding	Common Kestrel	1	12:16	257	17	150	90	0	PB1 (Raised bog). Hunting over bog

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
												<b>(off site)</b>
	29/03/2016	1	Both (overlap)	Common Pheasant	1	07:07						audible calling from W regularly until 0900
	29/03/2016	1	Both (overlap)	Common Pheasant	1	07:49						WS1 (birch scrub); calls audible on study area
	29/03/2016	1	Both (overlap)	Common Pheasant	1	10:55						offsite - audible behind VP
	30/03/2016	4&5	Both (overlap)	Common Pheasant	1	15:40						offsite - audible from heather behind VP
	30/03/2016	4&5	Both (overlap)	Common Pheasant	1	17:05						calls audible to NW throughout survey
	16/12/2015	4&5	Non-breeding	Common Pheasant	1	15:49						PB4 (bare peat); PB1 (remnant high bog); walking over bare peat and into heather on S of study area
	17/12/2015	2	Non-breeding	Common Pheasant	1	10:25						offsite - audible behind VP
	25/02/2016	2	Non-breeding	Common Pheasant	1	07:56						offsite - audible
	01/12/2015	1	Non-breeding	Common Raven	1	09:25						PB4 (bare peat); flies in from N and lands next to puddle in bare peat
	01/12/2015	1	Non-breeding	Common Raven	1	09:27						PB4 (bare peat); after foraging for 3 mins, leaves study area to N
200	23/03/2015	1	Both (overlap)	Common Snipe	12							<b>PB1 (remnant high bog); flushed from bog in W sector of study area</b>
200	24/03/2015	1	Both (overlap)	Common Snipe	1	15:13						<b>PB1 (remnant high bog); individual audible drumming</b>

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
200	13/04/2015	1	Breeding	Common Snipe	1+	16:04						PB1 (remnant high bog); drumming on remnant bog to N of W access point and wetland in SW of study area
200	15/04/2015	6	Breeding	Common Snipe	1							drumming on remnant bog to N of W access point and wetland in SW of study area
200	04/06/2015	1	Breeding	Common Snipe	1							PB1 (remnant high bog); drumming on remnant bog to N of W access point and wetland in SW of study area
201	30/09/2015	2	Non-breeding	Common Snipe	1	18:35	4	2	2			WS1 (birch scrub); flew into patch of scrub near met tower
202	22/05/2016	1	Breeding	Common Snipe	1	20:58	48		18	30		PB4 (bare peat); drumming bird
203	13/06/2016	1	Breeding	Common Snipe	1	17:31	39	4	5	30		PB4 (bare peat with pioneer poor fen); displaying - drumming and chipping
204	13/06/2016	1	Breeding	Common Snipe	1	19:41	427		22	405		PB4 (bare peat); WS1 (birch willow scrub); in flight display - drumming and chipping in flight
205	13/06/2016	1	Breeding	Common Snipe	1	19:58	268		13	255		PB4 (bare peat); WS1 (birch willow scrub); in flight display - drumming and chipping in flight

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
206	13/06/2016	1	Breeding	Common Snipe	1	21:26	187		187			PB4 (bare peat with pioneer poor fen); in flight display - drumming and chipping in flight
	29/03/2016	1	Both (overlap)	Common Starling	10	09:51						WL2 (treeline vegetation); flock drops into trees near quarry
	21/10/2015	2	Non-breeding	Common Starling	3	10:31						ED5 (dead and burned wood piles); fly into study area and perch on burnt logs and vegetation
	21/10/2015	2	Non-breeding	Common Starling	3	13:05						WS1 (birch scrub); flies from scrub and perches on cut and burnt logs
	17/12/2015	2	Non-breeding	Common Starling	31	08:46						flock flying S, then turn E
	17/12/2015	2	Non-breeding	Common Starling	1	08:54						flying over study area S, then turn E
	17/12/2015	2	Non-breeding	Common Starling	15	09:05						PB4 (bare peat); flies over VP to E
	17/12/2015	2	Non-breeding	Common Starling	40	10:20						fly across study area over VP, NW to SE
	27/01/2016	1	Non-breeding	Common Starling	25	08:45						flock flying NE to SW over study area
	25/02/2016	2	Non-breeding	Common Starling	2	10:17						offsite - audible behind VP
	25/02/2016	2	Non-breeding	Common Starling	300	12:28						murmuration flying around to S of gravel pit
	29/03/2016	1	Both (overlap)	Dunnock	1	09:22						WD4 (conifer plantation); singing in young conifer trees in scrub

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
	24/02/2016	1	Non-breeding	Dunnock	1	17:32						WS2 (mature birch willow scrub); observed
	17/12/2015	2	Non-breeding	Eurasian Jackdaw	3	10:17						WL2 (treeline vegetation); fly W to E over treeline to N, calling
	06/12/2013	2	Non-breeding	Eurasian Sparrowhawk	1	16:05	30	10	10	10		WS1 (birch scrub); hunting over scrub, 0-50 m high
	09/01/2014	4&5	Non-breeding	Eurasian Sparrowhawk	1	15:31	20	20				hunting along margins of study area, 0-10m high. Not considered target species at time of survey - flightline not mapped
	24/03/2015	1	Both (overlap)	Eurasian Sparrowhawk	2	15:13	120			120		WS2 (birch willow scrub woodland); pair over strip of woodland and scrub along SW boundary of study area. Probable territorial pair. Not considered target species at time of survey - flightline not mapped
	13/04/2015	1	Breeding	Eurasian Sparrowhawk	1	16:04	20	20				WN7 (bog woodland); male hunting along woodland edge, 0-10m high. Not considered target species at time of survey - flightline not mapped

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
	18/05/2015	1	Breeding	Eurasian Sparrowhawk	1	14:10	30	15	15			WS1 (birch scrub); female hunting, 0-20m high. Not considered target species at time of survey - flightline not mapped
	13/07/2015	1	Breeding	Eurasian Sparrowhawk	3	09:38	240			120	120	three probably fledged young over SW sector of study area moving W, 50-200m high. Not considered target species at time of survey - flightline not mapped
	11/08/2015	6	Breeding	Eurasian Sparrowhawk	2	08:56	60	20	20	20		WL2 (treeline); WS1 (birch scrub); PB4 (bare peat); flew from treeline on study area boundary to scrub within cut peat, 0-30m high. Not considered target species at time of survey - flightline not mapped
209	14/06/2016	2	Breeding	Eurasian Sparrowhawk	1	20:06	11	11				WS1 (birch willow scrub); male - left perch on branch and flew at approximately 5m high through scrub
210	13/07/2016	2	Breeding	Eurasian Sparrowhawk	1	09:37	51	51	0	0	0	PB4 (Cutover bog), WS1 (Scrub). Flying from area of scrub across peat to area of scrub on W of site

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	15/04/2015	6	Breeding	Eurasian Woodcock	2							WN7 (bog woodland); along woodland strip on SW study area boundary after survey is completed - incidental
212	22/05/2016	1	Breeding	Eurasian Woodcock	1	21:19	51		51			PB4 (bare peat); heard calling and then observed flying over cutaway and nearby treeline
213	22/05/2016	1	Breeding	Eurasian Woodcock	1	21:53	48		48			PB4 (bare peat); heard calling and then observed flying over cutaway and nearby treeline
214	22/05/2016	1	Breeding	Eurasian Woodcock	2	22:18	19		19			PB4 (bare peat); two males roding
015	22/05/2016	1	Breeding	Eurasian Woodcock	2	22:18						roding indicates breeding territory
215	24/05/2016	4&5	Breeding	Eurasian Woodcock	1	22:05	26	26	0	0		offsite - heard calling first and then observed flying along boundary between cutover and woodland at edge for 26 seconds at 10-25m. Two other Woodcock heard on way back to car after VP along the same boundary
	13/06/2016	2	Breeding	Eurasian Woodcock	2							WS1 (birch willow scrub); incidental record - en route from VP2, two

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												observed roding between areas of birch and willow scrub
224	16/01/2014	1	Non-breeding	European Golden Plover	35	09:50	60			30	30	flew S out of study area, 150-200m high
225	14/03/2014	1	Both (overlap)	European Golden Plover	50	15:55	300			150	150	circling over centre of study area drifting slowly N, 150-200m high
226	30/09/2015	2	Non-breeding	European Golden Plover	1	19:10	6		6			fly past. Flight call heard.
227	04/10/2015	2	Non-breeding	European Golden Plover	1	08:47	3	3				BL3 (road); flew in and joined other bird that was perched upon the peat road. Could hear birds calling in 3 different locations just before flight
	04/10/2015	2	Non-breeding	European Golden Plover	1	07:01						BL3 (road); perched on peat roadway about 100m from meteorological tower. Was there for duration of VP watch. Walked a little, never flew. Was joined by another GP that flew in from grassy patch
228	05/10/2015	1	Non-breeding	European Golden Plover	4	09:22	6			6		PB4 (bare peat with pioneer dry grassland); flying across the study

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												area. Could be heard calling from regenerated strips just before flight
229	20/10/2015	1	Non-breeding	European Golden Plover	40	12:20	45			45		PB4 (bare peat); WS1 (birch scrub); WL2 (treeline); GA1 (agricultural fields); flock from W, circles over study area boundary and returns W, calling, over 100m. Flying in study area for 45 seconds
230	20/10/2015	1	Non-breeding	European Golden Plover	60	13:57						offsite - flock flying high (100m+) and calling, off study area to the N over agricultural fields for 45 seconds
231	20/10/2015	1	Non-breeding	European Golden Plover	30	17:20	20			20		PB4 (bare peat); WS1 (birch scrub); flock flies E to W over study area, past the communications tower, 30-50m. Flight lasts for 40 seconds and is within study area for 20 seconds
232	20/10/2015	1	Non-breeding	European Golden Plover	15	18:10						offsite - flock flying for 40 seconds to N of study area near quarry treeline and bare peat, 20-30m

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233	21/10/2015	2	Non-breeding	European Golden Plover	12	12:03	15	5	10			PB4 (bare peat); resting flock takes off from bare peat and leaves study area, ascending to 12m. Spends 15 seconds within study area
001	21/10/2015	2	Non-breeding	European Golden Plover	12	12:03						PB4 (bare peat); resting flock
	22/10/2015	4&5	Non-breeding	European Golden Plover	small flock	17:18						calling - not visible
	22/10/2015	4&5	Non-breeding	European Golden Plover	small flock	18:14						calling - not visible
	26/11/2015	4&5	Non-breeding	European Golden Plover	300	11:27						offsite - off study area to S in distance, circling. Not mapped
	26/11/2015	4&5	Non-breeding	European Golden Plover	large flock	12:40						audible
234	30/11/2015	2	Non-breeding	European Golden Plover	90	13:11	420	30	195	195		PB4 (bare peat); 2 flocks of 45 fly from bare peat, circle repeatedly and fly E out of sight, reaching up to 60m
235	30/11/2015	2	Non-breeding	European Golden Plover	6	15:24	40	40				PB4 (bare peat); fly 6m high from N and land in area of bare peat (40 seconds flying within study area)
004	30/11/2015	2	Non-breeding	European Golden Plover	6	15:24	40	40				landed flock (Map Ref. 444) remain resting here on bare peat (PB4) for

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
												duration of survey (until 16:49 - i.e.1hr 30mins)
236	01/12/2015	1	Non-breeding	European Golden Plover	4	09:15	10	10				PB4 (bare peat); move around study area, disturbed by workmen, low flight
237	01/12/2015	1	Non-breeding	European Golden Plover	15		30			30		flying out of study area towards S of Cloncreen. 30s in study area, 5s offsite
	01/12/2015	1	Non-breeding	European Golden Plover	large flock	11:31						audible. Not visible
238	17/12/2015	2	Non-breeding	European Golden Plover	25	09:45	70	20	25	25		PB4 (bare peat); lift from bare peat and fly E, gaining height up to 30-40m. Flight lasts 75 seconds, 70 seconds in which birds are flying in study area
239	17/12/2015	2	Non-breeding	European Golden Plover	3	13:50	10	10				PB4 (bare peat); resting flock flushed by dogs running over bog, fly low and land again
002	17/12/2015	2	Non-breeding	European Golden Plover	4	10:30						PB4 (bare peat); resting on bare peat
002	17/12/2015	2	Non-breeding	European Golden Plover	4	11:40						PB4 (bare peat) ; same flock as in morning (recorded at 10:30) resting on bare peat - remain for duration of survey

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
												(3hrs)
003	17/12/2015	2	Non-breeding	European Golden Plover	3	13:50						PB4 (bare peat); resting flock
240	27/01/2016	1	Non-breeding	European Golden Plover	27	08:19	70		35	35		PB4 (bare peat); lift from bare peat and fly W towards Ballycon, calling and ascending to 35m. Total flight time of 80 seconds, 70 seconds of which were within study area
241	27/01/2016	1	Non-breeding	European Golden Plover	2	12:31	10	10				PB4 (bare peat with pioneer dry grassland and pioneer poor fen mosaic); disturbed by Rook and fly up, circle and land, not exceeding 10m
242	28/01/2016	2	Non-breeding	European Golden Plover	8	11:20	25	10	15			PB4 (bare peat); flew N to S over bare peat at 20m and out of view behind railway
243	28/01/2016	4&5	Non-breeding	European Golden Plover	70	16:27						offsite - flying outside the study area along the S boundary at 50-70m high for 40 seconds
244	28/01/2016	2	Non-breeding	European Golden Plover	35	13:31	50	40	10			PB4 (bare peat); lift from bare peat and fly S, over gravel pit, and circle, gaining height over 10m

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
												and move out of view
245	28/01/2016	2	Non-breeding	European Golden Plover	500	15:52						offsite - flying in the distance, S of Cloncreen, for 60 seconds
246	24/02/2016	1	Non-breeding	European Golden Plover	60	12:34	40			40		PB4 (bare peat); GA1 (agricultural grassland); flock flying at 60-80m along the S boundary of the study area. Flight lasts 120 seconds. 40 seconds area within study area
247	24/02/2016	1	Non-breeding	European Golden Plover	100	13:00	60			60		PB4 (bare peat); WN7 (bog woodland); GA1 (agricultural grassland); flew along S boundary at 30-60m high. 60 seconds spent within study area
248	25/02/2016	4&5	Non-breeding	European Golden Plover	250	12:51	90			90		flying along S boundary of study area at 30-60m high. Flew W.
249	25/02/2016	4&5	Non-breeding	European Golden Plover	60	10:23	10			10		flock flying outside and inside study area over S boundary. Observed for 70 seconds in total but 10 within study area boundary. 30-50m high. Flew W and descended.

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
216	29/03/2016	1	Both (overlap)	European Golden Plover	50	09:35	90			90		flock circling in N of study area between 60m and 80m. Spend 90 seconds within study area boundary
217	29/03/2016	1	Both (overlap)	European Golden Plover	200	12:51	60				60	flock circling high over E area of study area, at 100m-120m. 60 seconds spent within study area
218	30/03/2016	4&5	Both (overlap)	European Golden Plover	17	13:58	45			45		PB4 (bare peat); flying N 30-35m high and veer W. 45 seconds spent within study area
219	30/03/2016	2	Both (overlap)	European Golden Plover	35	15:52	20	20				PB4 (bare peat); enter study area from the NW flying at 8-10m high and settle/rest in area of peat. 20 seconds spent within study area
220	30/03/2016	2	Both (overlap)	European Golden Plover	40	18:48	720	30	345	345		PB4 (bare peat) ; flying 4-30m high and circling
	30/03/2016	4&5	Both (overlap)	European Golden Plover	7	17:01						offsite - flying to S of Cloncreen. Too distant to map
	30/03/2016	4&5	Both (overlap)	European Golden Plover	25	17:05						offsite - flying W to E, S of Cloncreen. Too distant to map
	30/03/2016	4&5	Both (overlap)	European Golden Plover	600	17:07						offsite - flock circling to SE of Cloncreen. Too distant to map
	30/03/2016	4&5	Both (overlap)	European Golden	large flock	13:45						offsite - audible to SW

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
				<b>Plover</b>								
	16/12/2015	4&5	Non-breeding	European Goldfinch	2	10:15						PB1 (remnant high bog); flying over heather
	16/12/2015	4&5	Non-breeding	European Goldfinch	2	11:55						PB4 (bare peat); PB1 (remnant high bog); flies over bare peat in front of VP and into heather
	16/12/2015	4&5	Non-breeding	European Goldfinch	2	13:55						PB4 (bare peat with pioneer dry grassland); flying near grass
	29/03/2016	1	Both (overlap)	European Robin	2	07:08						WL2 (marginal treeline vegetation); singing in marginal treeline vegetation and on telegraph wire throughout survey
	29/03/2016	1	Both (overlap)	European Robin	1	10:32						WS1 (birch scrub); singing in scrub
	30/03/2016	4&5	Both (overlap)	European Robin	1	19:01						WS1 (birch scrub); singing
	30/09/2015	1	Non-breeding	European Robin	3							observed
	20/10/2015	1	Non-breeding	European Robin	2	12:15						WL2 (treeline vegetation); territory calls audible
	20/10/2015	1	Non-breeding	European Robin	2	15:30						WL2 (treeline vegetation); territory calls from study area boundary vegetation/treeline
	20/10/2015	1	Non-breeding	European Robin	1	15:51						WS1 (birch scrub); calling from scrub in front of VP1 (to

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
												W)
	22/10/2015	4&5	Non-breeding	European Robin	1	17:19						PB1 (remnant high bog); calls from behind VP4/5 in heather
	22/10/2015	4&5	Non-breeding	European Robin	1	17:43						PB1 (remnant high bog); territory calls from heather behind VP4/5
	22/10/2015	4&5	Non-breeding	European Robin	1	18:13						PB1 (remnant high bog); singing from heather behind VP4/5
	01/12/2015	1	Non-breeding	European Robin	1	08:05						WL2 (treeline vegetation); singing from vegetation on study area boundary
	01/12/2015	1	Non-breeding	European Robin	1	08:07						WL2 (treeline vegetation); territory calls from vegetation
	01/12/2015	1	Non-breeding	European Robin	1	09:11						WS1 (birch scrub); territory calls from vegetation
	01/12/2015	1	Non-breeding	European Robin	1	09:56						WS1 (birch scrub); territory calls from vegetation in front of VP1
	01/12/2015	1	Non-breeding	European Robin	1	11:41						WL2 (treeline vegetation); territory calls from marginal vegetation
	01/12/2015	1	Non-breeding	European Robin	1	11:45						WL2 (treeline vegetation); singing from marginal vegetation

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
	17/12/2015	2	Non-breeding	European Robin	2	09:00						offsite - audible singing behind VP
	21/12/2015	1	Non-breeding	European Robin	1	10:20						WL2 (treeline vegetation); territory calls audible from marginal treeline
	21/12/2015	1	Non-breeding	European Robin	1	12:17						WS1 (birch scrub); singing from scrub in front of VP
	21/12/2015	1	Non-breeding	European Robin	1	14:15						WS1 (birch scrub); singing and territory calls from scrub
	27/01/2016	1	Non-breeding	European Robin	2	08:55						WL2 (marginal treeline vegetation); singing in marginal vegetation
	27/01/2016	1	Non-breeding	European Robin	2	11:53						WS1 (scrub); WL2 (treeline); males singing from within treeline/scrub
	25/02/2016	2	Non-breeding	European Robin	2	07:37						WS2 (mature birch willow scrub); territory singing
	25/02/2016	4&5	Non-breeding	European Robin	3	11:32						PB1 (remnant high bog); behind (E) of VP
	20/10/2015	1	Non-breeding	Goldcrest	1	16:44						WL2 (treeline vegetation); in boarder vegetation/treeline
	21/10/2015	2	Non-breeding	Goldcrest	1	07:55						WS1 (birch scrub); fly over bare peat from scrub to study area boundary vegetation over VP2

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
284	04/08/2016	1	Breeding	Grey Heron	1	18:47	168	45	60	63	0	PB4 (Cutover bog), WS1 (Scrub/ transitional woodland), G (Grassland and marsh). Flying over - soaring on thermals from on site to off site
254	30/09/2015	1	Non-breeding	Grey Heron	1	16:53	12	12				flying, 8m high
255	02/10/2015	4&5	Non-breeding	Grey Heron	1	18:23	9	4	5			PB4 (bare peat); flew to drainage ditch on cutaway
256	04/10/2015	2	Non-breeding	Grey Heron	2	09:22	12	6	6			ED2&FL8 (disused flooded quarry lake); PB4 (bare peat); flying from quarry lake to drainage ditch. 12 seconds within study area
257	06/10/2015	4&5	Non-breeding	Grey Heron	2	08:24	10	10				PB4 (bare peat); flying from drainage ditch to perch on spoil heap, then back to drainage ditch some minutes later
258	20/10/2015	1	Non-breeding	Grey Heron	1	12:12	30	30				WS1 (birch scrub); flies across in front of VP1 approximately 50m in distance and less than 10m high and lands to SW
259	20/10/2015	1	Non-breeding	Grey Heron	1	13:53	30	30				WS1 (birch scrub); fly in front of VP1, to E, below 10m

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
260	20/10/2015	1	Non-breeding	Grey Heron	1	18:06	30	30				PB4 (bare peat with pioneer dry grassland); fly around within study area foraging, below 10m
261	22/10/2015	4&5	Non-breeding	Grey Heron	1	16:34	20		20			PB4 (bare peat); WS1 (birch scrub); flying to move around study area, foraging approximately 200m in front of VP4/5 near railway, 10-15m
262	26/11/2015	4&5	Non-breeding	Grey Heron	1	11:00	20	20				flies across in front of VP4/5 at 4-5m. Apparently follows digger to feed on squashed frogs
263	30/11/2015	2	Non-breeding	Grey Heron	1	11:08						offsite - flew E to N at 9m high for 10 seconds - likely came from Lough Aisling
264	30/11/2015	2	Non-breeding	Grey Heron	1	13:49	40	40				FW4 (drainage ditch); flying at 8-10m high N and descends into FW4. Flies over bare peat
290	28/01/2016	2	Non-breeding	Grey Heron	1	12:48	30	30				PB4 (bare peat); flying low (less than 5m) over bare peat S to NE. Lands, possibly in a drain
291	24/02/2016	1	Non-breeding	Grey Heron	1	15:53	50		50			flying W towards Ballycon, over NW part of the study

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
												area flying at 13-14m high, commuting
292	25/02/2016	4&5	Non-breeding	Grey Heron	1	07:37	70		70			PB1 (remnant high bog); flew N-S direction 20-25m high
293	25/02/2016	2	Non-breeding	Grey Heron	1	08:06	30			30		commuting W to E 50m high. Observed for 65 seconds, 30 of which were on study area
250	29/03/2016	1	Both (overlap)	Grey Heron	2	11:50	20	5	15			PB4 (bare peat with pioneer poor fen); flies into study area from W at 20m and descends into grass around flooded peat
251	29/03/2016	1	Both (overlap)	Grey Heron	1	12:08	10	10				PB4 (bare peat with pioneer poor fen); one of the individuals from above makes a short, low flight into another drain
252	30/03/2016	2	Both (overlap)	Grey Heron	1	15:12						offsite - observed, but not within study area
253	30/03/2016	2	Both (overlap)	Grey Heron	1	17:52	15	15				FL8 (artificial fishing pond); PB4 (bare peat); short flight to the S, coming from Lough Aisling and descending into an area of peat, at 4m high. 15 seconds spent within study

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												area
265	27/04/2016	2	Breeding	Grey Heron	1	09:23	16	8	8			ED2&FL8 (disused flooded quarry; artificial fishing pond); flew from Lough Aisling into the water in the gravel pit to the E of the works compound. Flight lasts 30 seconds, 16 seconds of which are within study area
266	27/04/2016	2	Breeding	Grey Heron	1	09:58	16	8	8			ED2&FL8 (disused gravel pit; artificial fishing pond); flew from Lough Aisling into the water in the quarry to the E of the works compound. Flight lasts 30 seconds, 16 seconds of which are within study area
267	22/05/2016	1	Breeding	Grey Heron	2	17:07	35		35			PB4 (bare peat); flying over. Flies out of study area to W. Flight lasts 38 seconds, 35 seconds within study area
268	23/05/2016	2	Breeding	Grey Heron	1	08:11	42		42			PB4 (bare peat); flying over
269	24/05/2016	4&5	Breeding	Grey Heron	1	18:41	7		7			PB4 (bare peat); moving locations along drain

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270	24/05/2016	4&5	Breeding	Grey Heron	2	21:31						offsite - flying over bog for 31 seconds and lands offsite
271	13/06/2016	1	Breeding	Grey Heron	1	17:56						offsite - flying W at approximately 35m high for 58 seconds
272	13/06/2016	1	Breeding	Grey Heron	1	20:26	49	49				FL4 (drainage channel); leaving drain and flying S at approximately 10m high
273	14/06/2016	2	Breeding	Grey Heron	1	15:45	12	12				FL8 (artificial fishing pond); PB4 (bare peat); leaves pond and flies through scrub. Flight lasts 14 seconds, 12 seconds of which are within study area
274	14/06/2016	2	Breeding	Grey Heron	1	17:41	38	19	19			FL4 (drainage channel); flying from drain
275	15/06/2016	4&5	Breeding	Grey Heron	1	06:48	58	29	29			PB4 (bare peat); observed in flight
276	15/06/2016	4&5	Breeding	Grey Heron	1	08:31						offsite - flying approximately 5m high for 48 seconds
294	08/07/2016	1	Breeding	Grey Heron	1	12:54	56	56	0	0	0	
277	13/07/2016	2	Breeding	Grey Heron	2	09:51	68	68	0	0	0	PB4 (Cutover bog). Flying over habitat and landing on bare peat beside drain
278	13/07/2016	2	Breeding	Grey Heron	1	10:08	7	7	0	0	0	PB4 (cutover bog), FL8 (Other artificial lakes and

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												ponds). Moving location on pond
279	13/07/2016	2	Breeding	Grey Heron	1	12:34	131	86	45	0	0	PB4 (Cutover bog), WS1 (Scrub), FL8 (Artificial pond). Flying over
280	13/07/2016	2	Breeding	Grey Heron	1	12:37	33	33	0	0	0	PB4 (Cutover bog). Flying over peat to land in drain on site
281	13/07/2016	2	Breeding	Grey Heron	2	12:48	27	27	0	0	0	PB4 (Cutover bog), BL3 (Buildings and artificial surfaces). Flying over
282	13/07/2016	2	Breeding	Grey Heron	1	13:41	8	8	0	0	0	PB4 (cutover bog), FL8 (Other artificial lakes and ponds). Moving locations on pond
283	13/07/2016	2	Breeding	Grey Heron	1	14:21	38	38	0	0	0	PB4 (Cutover bog). Landing on bare peat presumably near drain
285	11/08/2016	4&5	Breeding	Grey Heron	1	09:37	67	37	30	0	0	PB4, (Cutover bog): flying over (on site)
286	11/08/2016	4&5	Breeding	Grey Heron	1	11:22	71	71	0	0	0	PB4, (Cutover bog); flying over (off site)
287	11/08/2016	4&5	Breeding	Grey Heron	1	11:53	69	9	60	0	0	PB4 (Cutover bog), FL8 (Other artificial lakes and ponds). Flying over and landing near water pond (on site)
295	08/07/2016	1	Breeding	Grey Heron	1	14:56	71	71	0	0	0	

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288	12/08/2016	2	Breeding	Grey Heron	1	10:42	38	38	0	0	0	PB4 (Cutover bog), G (Grassland and marsh) Flying over (on site)
289	12/08/2016	2	Breeding	Grey Heron	1	14:22	173	150	23	0	0	PB4 (Cutover bog): flying over in SW direction (on site)
297	04/08/2016	1	Breeding	Hen Harrier	1	15:38	47	44	3	0	0	WS1 (Scrub). Ring tail hunting briefly over habitat before descending into habitat.
296	04/08/2016	1	Breeding	Hen Harrier	1	18:15	22	22	0	0		WS1 (Scrub). Ringtails hunting on site
301	04/08/2016	1	Breeding	Hen Harrier	1	19:51	179	179				WS1, (Scrub/ transitional woodland) Ringtail hunting, descends into habitat (onsite)
298	17/12/2013	1	Non-breeding	Hen Harrier	1	08:50	40	20	20			BL3 (fencepost); adult male flew into study area from W perched on post for 6 min, 0-20 m high
299	17/12/2013	1	Non-breeding	Hen Harrier	1	08:57	60	30	30			same individual male flew W out of study area, 0-20m high
300	09/01/2014	4&5	Non-breeding	Hen Harrier	1	14:50	90	30	30	30		hunting along E margin of study area, 0-30m high
	29/03/2016	1	Both (overlap)	Hooded Crow	1	07:19						flying over study area, calling
	29/03/2016	1	Both (overlap)	Hooded Crow	5	07:36						fly over study area NE to SW at 12m
	29/03/2016	1	Both (overlap)	Hooded Crow	1	07:51						fly over study area W to E and then back E to W

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	29/03/2016	1	Both (overlap)	Hooded Crow	2	09:18						flying W over study area
	29/03/2016	1	Both (overlap)	Hooded Crow	1	11:31						PB4 (bare peat); flying around foraging in low, short flights
	29/03/2016	1	Both (overlap)	Hooded Crow	4	11:44						fly over study area S to N, calling
	30/03/2016	4&5	Both (overlap)	Hooded Crow	1	16:33						BL3 (telegraph wire); perched and preening to S of VP
	30/03/2016	4&5	Both (overlap)	Hooded Crow	2	17:20						BL3 (telegraph wire); perched
	30/03/2016	4&5	Both (overlap)	Hooded Crow	1	19:10						offsite - audible behind VP
	30/09/2015	1	Non-breeding	Hooded Crow	1							observed
	21/10/2015	2	Non-breeding	Hooded Crow	2	09:06						PB4 (bare peat); WN7 (bog woodland); fly over bare peat in front of VP2 and into treeline on left
	21/10/2015	2	Non-breeding	Hooded Crow	1	09:06						PB4 (bare peat); flies into bare peat, loops and leaves again off the study area
	21/10/2015	2	Non-breeding	Hooded Crow	1	10:14						PB4 (bare peat); flying low over bare peat and grass. Disturbs hare
	21/10/2015	2	Non-breeding	Hooded Crow	1	10:47						WL2 (treeline); PB4 (peat stockpile); flies from treeline to forage on top of peat piles
	21/10/2015	2	Non-breeding	Hooded Crow	2	12:30						WS2 (mature birch willow scrub); PB4 (bare peat); flies from vegetation to

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												land on peat piles to SW of VP2
	21/10/2015	2	Non-breeding	Hooded Crow	1	13:35						PB4 (bare peat); WS1 (birch scrub); flying low over bare peat and into scrub
	22/10/2015	4&5	Non-breeding	Hooded Crow	2	14:33						PB4 (bare peat with pioneer dry grassland and pioneer poor fen mosaic); WS1 (birch scrub); flying through study area
	26/11/2015	4&5	Non-breeding	Hooded Crow	1	09:50						PB4 (bare peat with temporary standing water); flies over cut over bog and lands next to flood puddle
	26/11/2015	4&5	Non-breeding	Hooded Crow	1	09:56						PB4 (bare peat); flies to perch on peat pile and picks at plastic cover
	26/11/2015	4&5	Non-breeding	Hooded Crow	1	10:15						PB4 (bare peat); foraging on peat piles
	26/11/2015	4&5	Non-breeding	Hooded Crow	1	10:16						PB4 (bare peat with pioneer dry grassland and pioneer poor fen mosaic); flying over bare peat and vegetation
	26/11/2015	4&5	Non-breeding	Hooded Crow	1	12:40						PB4 (bare peat); foraging on bare peat and flies W
	26/11/2015	4&5	Non-breeding	Hooded Crow	1	14:00						flies into study area from E
	01/12/2015	1	Non-	Hooded Crow	1	09:40						commuting through

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			breeding									study area
	01/12/2015	1	Non-breeding	Hooded Crow	1	11:36						offsite - audible from road
	01/12/2015	1	Non-breeding	Hooded Crow	1	11:40						PB4 (bare peat); flies to land on bare peat
	01/12/2015	1	Non-breeding	Hooded Crow	2	11:45						WS1 (birch scrub); fly and perch on young trees in front of VP1
	01/12/2015	1	Non-breeding	Hooded Crow	1	13:20						WS1 (birch scrub); moving through scrub
	01/12/2015	1	Non-breeding	Hooded Crow	1	13:40						PB4 (bare peat); flies and lands on bare peat
	01/12/2015	1	Non-breeding	Hooded Crow	4	14:05						PB4 (bare peat); rise from bare peat and leave study area
	17/12/2015	2	Non-breeding	Hooded Crow	1	08:47						PB4 (bare peat); perched calling on bare peat, then leaves study area to N
	17/12/2015	2	Non-breeding	Hooded Crow	2	08:57						PB4 (bare peat); fly in from E and perch on bare peat
	17/12/2015	2	Non-breeding	Hooded Crow	1	08:59						PB4 (bare peat); lifts from bare peat and leaves study area to E
	17/12/2015	2	Non-breeding	Hooded Crow	1	09:46						WL2 (treeline vegetation); flying and calling, foraging through trees N of VP, perching
	17/12/2015	2	Non-breeding	Hooded Crow	1	10:10						PB4 (bare peat); flies in from E and perches on peat

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
												pile
	17/12/2015	2	Non-breeding	Hooded Crow	1	10:47						WS2 (mature birch willow scrub); fly from trees and out of study area to N
	17/12/2015	2	Non-breeding	Hooded Crow	1	12:00						WN7 (bog woodland); PB4 (bare peat); flies over trees from N and lands on peat pile
	17/12/2015	2	Non-breeding	Hooded Crow	4	12:04						PB4 (bare peat); foraging on peat piles
	17/12/2015	2	Non-breeding	Hooded Crow	2	12:20						PB4 (bare peat); WN7 (bog woodland); flies out of peat and into trees
	17/12/2015	2	Non-breeding	Hooded Crow	1	12:32						PB4 (bare peat); WN7 (bog woodland); flies from peat into trees
	17/12/2015	2	Non-breeding	Hooded Crow	4	13:16						WN7 (bog woodland); PB4 (bare peat with temporary standing water); fly from trees and land on bare peat, foraging in flooded peat
	21/12/2015	1	Non-breeding	Hooded Crow	2	12:16						fly over study area N to S
	21/12/2015	1	Non-breeding	Hooded Crow	3	14:20						BL3 (telegraph wire); perching on telegraph wires to S
	21/12/2015	1	Non-breeding	Hooded Crow	2	14:37						PB4 (bare peat); foraging on bare peat

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
	21/12/2015	1	Non-breeding	Hooded Crow	1	15:58						WL2 (tree in treeline); perched on tree
	27/01/2016	1	Non-breeding	Hooded Crow	1	14:24						WD4 (conifer tree); flies in from W and perches on conifer tree
	27/01/2016	1	Non-breeding	Hooded Crow	2	14:26						flying W over study area
	28/01/2016	2	Non-breeding	Hooded Crow	2	11:01						PB4 (bare peat); fly to land on bare peat, N to S
	28/01/2016	2	Non-breeding	Hooded Crow	1	11:07						PB4 (bare peat); WS1 (birch scrub); lifts from bare peat and flies into scrub to N
	28/01/2016	2	Non-breeding	Hooded Crow	1	11:32						PB4 (bare peat); travelling around over bare peat, foraging
	28/01/2016	2	Non-breeding	Hooded Crow	1	12:10						PB4 (bare peat); ED5 (dead and burned wood piles); flies from bare peat and perches on dead wood pile and then leaves study area to W
	28/01/2016	2	Non-breeding	Hooded Crow	1	12:26						PB4 (bare peat); flies into NW corner and land on bare peat
	28/01/2016	2	Non-breeding	Hooded Crow	1	12:40						WN7 (bog woodland); flying S to N over study area and into trees
	28/01/2016	2	Non-breeding	Hooded Crow	1	15:25						ED5 (dead and burned wood piles); perches on a pile of dead wood

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
	28/01/2016	2	Non-breeding	Hooded Crow	1	16:24						PB4 (bare peat); flies in from W and lands on bare peat
	28/01/2016	2	Non-breeding	Hooded Crow	1	16:25						WS1 (birch scrub); flies in from W and straight into scrub
	24/02/2016	1	Non-breeding	Hooded Crow	2	12:00						flying over study area
	24/02/2016	1	Non-breeding	Hooded Crow	1	13:05						flying over NW section
	24/02/2016	1	Non-breeding	Hooded Crow	1	14:08						flying over middle section of study area
	25/02/2016	2	Non-breeding	Hooded Crow	2	07:36						PB4 (peat stockpile); foraging on peat stockpiles
	25/02/2016	4&5	Non-breeding	Hooded Crow	1	07:50						PB4 (bare peat); E part of bog
	25/02/2016	2	Non-breeding	Hooded Crow	2	08:26						WN7 (bog woodland); PB4 (bare peat); one perches on young tree on study area boundary, then both fly over bare peat and land
	25/02/2016	2	Non-breeding	Hooded Crow	2	08:55						ED5 (dead and burned wood piles); perched on piles of dead wood
	25/02/2016	2	Non-breeding	Hooded Crow	2	09:15						offsite - same pair fly out of study area to W
	25/02/2016	2	Non-breeding	Hooded Crow	3	09:30						PB4 (bare peat); moving around bare peat foraging
	25/02/2016	2	Non-breeding	Hooded Crow	2	09:50						flying over study area N to S
	25/02/2016	2	Non-breeding	Hooded Crow	4	10:15						PB4 (bare peat); flying over study area from W and

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
												have an antagonistic interaction on bare peat
	25/02/2016	2	Non-breeding	Hooded Crow	1	11:51						ED5 (dead and burned wood piles); perched on dead wood, occasionally calling, for several minutes
	25/02/2016	2	Non-breeding	Hooded Crow	7	12:00						PB4 (bare peat); flying across bare peat E to W and off study area
	25/02/2016	2	Non-breeding	Hooded Crow	4	12:40						PB4 (bare peat); foraging and short flights
	04/10/2015	2	Non-breeding	Lesser Black-backed Gull	4	09:58	10		10			ED2&FL8 (disused flooded quarry) ; flying to quarry lake. 10 seconds within study area
302	12/08/2016	2	Breeding	Lesser Black-backed Gull	5	11:47	49	0	0	49	0	G (Grassland and marsh), PB1 (Raised bog), FL8 (Other artificial lakes and ponds). Flying over
	29/03/2016	1	Both (overlap)	Lesser Redpoll	5	07:20						WS1 (birch scrub); rattles and calls audible
	29/03/2016	1	Both (overlap)	Lesser Redpoll	1	12:30						WL2 (marginal treeline vegetation); calling
	30/03/2016	4&5	Both (overlap)	Lesser Redpoll	1	15:49						PB4 (bare peat); flies over VP
	30/03/2016	2	Both (overlap)	Lesser Redpoll	1	17:02						PB4 (bare peat); flying over in front of VP

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
	30/09/2015	1	Non-breeding	Lesser Redpoll	1							observed
	20/10/2015	1	Non-breeding	Lesser Redpoll	1	12:34						WL2 (treeline vegetation); calls audible
	20/10/2015	1	Non-breeding	Lesser Redpoll	1	15:33						WL2 (treeline vegetation); calling from study area boundary vegetation/treeline
	22/10/2015	4&5	Non-breeding	Lesser Redpoll	1	15:15						WS1 (birch scrub); audible from scrub in front of VP4/5
	26/11/2015	4&5	Non-breeding	Lesser Redpoll	1	10:12						PB4 (bare peat); audible
	26/11/2015	4&5	Non-breeding	Lesser Redpoll	35	10:14						WS1 (birch scrub); PB4 (bare peat); perch on tree behind VP, then fly out over bare peat
	26/11/2015	4&5	Non-breeding	Lesser Redpoll	35	10:50						PB4 (bare peat); flock foraging on bare peat fly up
	26/11/2015	4&5	Non-breeding	Lesser Redpoll	2	12:41						PB4 (bare peat); flies over bare peat
	26/11/2015	4&5	Non-breeding	Lesser Redpoll	1	14:10						audible
	01/12/2015	1	Non-breeding	Lesser Redpoll	100	08:30						three flocks flying through study area
	01/12/2015	1	Non-breeding	Lesser Redpoll	6	09:55						WS1 (birch scrub); calling from vegetation in front of VP1 and flies out
	01/12/2015	1	Non-breeding	Lesser Redpoll	20	10:51						WS1 (birch scrub); flies out of vegetation
	01/12/2015	1	Non-breeding	Lesser Redpoll	22	10:59						WS1 (birch scrub); perched in young tree in front of VP1

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
	01/12/2015	1	Non-breeding	Lesser Redpoll	1	11:44						WS1 (birch scrub); calls from vegetation in front of VP1
	01/12/2015	1	Non-breeding	Lesser Redpoll	9	12:02						WS1 (birch scrub); flying among vegetation
	01/12/2015	1	Non-breeding	Lesser Redpoll	1	12:10						fly through study area
	01/12/2015	1	Non-breeding	Lesser Redpoll	2	13:29						flying and calling over study area
	16/12/2015	4&5	Non-breeding	Lesser Redpoll	1	11:56						PB4 (bare peat); flies over bare peat in front of VP and into heather
	16/12/2015	4&5	Non-breeding	Lesser Redpoll	2	12:11						WS1 (birch scrub); flushed by passing train
	17/12/2015	2	Non-breeding	Lesser Redpoll	20	09:20						WS1 (scrub); WL2 (treeline); fly out of vegetation and perch on tree next to lake, then fly S
	17/12/2015	2	Non-breeding	Lesser Redpoll	2	12:31						offsite - calls audible from behind VP
	21/12/2015	1	Non-breeding	Lesser Redpoll	25	11:30						WS1 (birch scrub); flies in from E and lands in scrub
	21/12/2015	1	Non-breeding	Lesser Redpoll	6	11:50						PB4 (bare peat with pioneer dry grassland and pioneer poor fen mosaic); fly out of grass and out of study area to E
	21/12/2015	1	Non-breeding	Lesser Redpoll	1	12:07						WS1 (birch scrub); calls audible from scrub

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
	21/12/2015	1	Non-breeding	Lesser Redpoll	1	12:29						WL2 (treeline vegetation); perched on trees calling in front of VP
	21/12/2015	1	Non-breeding	Lesser Redpoll	1	13:05						WS1 (birch scrub); moving around foraging area in short, low flights up to 5m
	21/12/2015	1	Non-breeding	Lesser Redpoll	1	14:03						PB4 (bare peat with pioneer dry grassland and pioneer poor fen mosaic); audible from grass
	27/01/2016	1	Non-breeding	Lesser Redpoll	1	08:50						WL2 (treeline vegetation); calls audible from marginal treeline
	27/01/2016	1	Non-breeding	Lesser Redpoll	1	14:25						WL2 (treeline vegetation); calls audible from marginal treeline
	28/01/2016	4&5	Non-breeding	Lesser Redpoll	3	12:24						PB4 (bare peat); flying over bare peat (weather bad)
	28/01/2016	2	Non-breeding	Lesser Redpoll	10	15:26						offsite - noisy flock comes out in vegetation behind VP after rain
	24/02/2016	1	Non-breeding	Lesser Redpoll	1	14:30						flying around W boundary
	25/02/2016	2	Non-breeding	Lesser Redpoll	1	07:51						WS2 (mature birch willow scrub); audible
	25/02/2016	4&5	Non-breeding	Lesser Redpoll	2	08:04						PB4 (bare peat); flying over VP
	25/02/2016	4&5	Non-breeding	Lesser Redpoll	7	13:02						PB4 (bare peat); at VP flying over

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
303	24/05/2016	4&5	Breeding	Long-eared Owl	1	20:52	366	366				PB4 (bare peat); WS2 (birch willow scrub); hunting at 5-10m between trees in birch willow scrub and over peat
304	24/05/2016	4&5	Breeding	Long-eared Owl	1	21:03	17	17				PB4 (bare peat); WS2 (birch willow scrub); hunting at 5-10m over birch willow scrub
	26/11/2015	4&5	Non-breeding	Long-tailed Tit	1	10:41						PB1 (remnant high bog); audible from heather behind VP
	26/11/2015	4&5	Non-breeding	Long-tailed Tit	1	13:20						audible
	01/12/2015	1	Non-breeding	Long-tailed Tit	1	09:41						WL2 (treeline vegetation); calling from marginal vegetation
	17/12/2015	2	Non-breeding	Long-tailed Tit	5	09:56						WL2 (treeline vegetation); foraging in trees N of VP
	17/12/2015	2	Non-breeding	Long-tailed Tit	9	10:46						WS2 (mature birch willow scrub); foraging in trees in front of VP and fly out of study area to E
	17/12/2015	2	Non-breeding	Long-tailed Tit	1	14:30						flies over study area on out of study area to E
	27/01/2016	1	Non-breeding	Long-tailed Tit	1	11:54						WL2 (treeline vegetation); audible, briefly, calling from marginal treeline

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
	21/10/2015	2	Non-breeding	Magpie	2	13:07						WL2 (treeline vegetation); fly along treeline on study area boundary (behind VP2)
314	20/10/2015	1	Non-breeding	Mallard	2	17:43	10		10			fly along W margin of study area, 15m
315	21/10/2015	2	Non-breeding	Mallard	6	10:17	15		15			PB4 (bare peat); fly through study area in front of VP over bare peat, 15m high
316	25/02/2016	2	Non-breeding	Mallard	3	07:50	20		20			FL8 (artificial fishing pond); circling 20m over Lough Aisling and VP, calling. One breaks off and other 2 drop into agricultural field off study area. Observed for 50 seconds in total, 20 of which were on study area
317	25/02/2016	2	Non-breeding	Mallard	2							FL4 (drainage channel); Incidental record - flushed from drainage channel by observer walking around study area
305	29/03/2016	1	Both (overlap)	Mallard	3	07:16	25			25		WS1 (birch scrub); fly out of scrub and out of study area to N. 30m and ascending to 50-60m. 25 seconds spent within study

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
												area
306	29/03/2016	1	Both (overlap)	Mallard	2	07:26	15	15				WL2 (marginal treeline vegetation); fly in a loop from W marginal vegetation and back at 5-8m high
307	29/03/2016	1	Both (overlap)	Mallard	2	08:13	15		15			PB4 (bare peat with pioneer poor fen); fly out of scrub and NW out of study area, ascending to 15m. Flight lasts 30 seconds, 15 seconds of which are within study area
308	29/03/2016	1	Both (overlap)	Mallard	2	08:42	40			40		PB4 (bare peat with pioneer poor fen); fly in from W (Ballycon) and loop over study area. One lands, the other returns W. 40m and up to 60m. 40 seconds spent within study area
309	29/03/2016	1	Both (overlap)	Mallard	1	12:21	20	5	7	8		WS1 (birch scrub); flies out of scrub area and heads NW out of study area, ascending to 30-40m. 20 seconds spent within study area

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310	27/04/2016	2	Breeding	Mallard	1	06:33	8		8			ED2&FL8 (disused flooded quarry); flew into the south of the compound and landed in quarry lake. Flight lasts 15 seconds, 8 seconds of which are within study area
311	27/04/2016	2	Breeding	Mallard	4	07:51	25	10	15			ED2&FL8 (disused flooded quarry); flew from quarry along the ridge at the compound and flew into the grass - courtship. Flight lasts 30 seconds, 25 seconds of which are within study area
312	28/04/2016	1	Breeding	Mallard	2	20:31	12		12			flew W (towards Ballycon). Flight lasts 15 seconds. 12 seconds within study area
313	23/05/2016	2	Breeding	Mallard	3	06:53	50			50		PB4 (bare peat); three males circled over cut peat and flew offsite. Flight lasts 52 seconds, 50 seconds within study area
	29/03/2016	1	Both (overlap)	Meadow Pipit	1	07:21						PB4 (bare peat with pioneer dry grassland and pioneer poor fen mosaic); display song and flight, not exceeding 10m in

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												height, throughout survey
	29/03/2016	1	Both (overlap)	Meadow Pipit	1	07:55						WS1 (birch scrub); moving around study area, perching in shrubs
	29/03/2016	1	Both (overlap)	Meadow Pipit	2	11:06						PB4 (bare peat with pioneer dry grassland and pioneer poor fen mosaic); display song and flight throughout survey
	29/03/2016	1	Both (overlap)	Meadow Pipit	2	11:24						WS1 (scrub); WL2 (treeline); fly out of scrub and into treeline
	30/03/2016	4&5	Both (overlap)	Meadow Pipit	2	13:05						PB4 (bare peat); flying and calling
	30/03/2016	4&5	Both (overlap)	Meadow Pipit	1	13:43						PB4 (bare peat); calling
	30/03/2016	2	Both (overlap)	Meadow Pipit	1	13:55						PB4 (bare peat); perched in front of VP2
	30/03/2016	4&5	Both (overlap)	Meadow Pipit	1	15:29						PB4 (peat stockpile); perched
	30/03/2016	4&5	Both (overlap)	Meadow Pipit	1	19:13						PB4 (bare peat with pioneer dry grassland and pioneer poor fen mosaic); calling
	30/09/2015	1	Non-breeding	Meadow Pipit	10							observed
	20/10/2015	1	Non-breeding	Meadow Pipit	11	12:05						WS1 (birch scrub); flock disturbed by train fly up in front of VP1
	20/10/2015	1	Non-breeding	Meadow Pipit	7	12:37						PB4 (bare peat); fly over VP1

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	20/10/2015	1	Non-breeding	Meadow Pipit	10	12:59						fly over study area from W to E
	20/10/2015	1	Non-breeding	Meadow Pipit	6	13:03						fly over study area from NW to SE
	20/10/2015	1	Non-breeding	Meadow Pipit	7	13:41						fly over study area from N to S
	20/10/2015	1	Non-breeding	Meadow Pipit	7	14:25						fly over study area W to E
	20/10/2015	1	Non-breeding	Meadow Pipit	22	18:00						fly across study area over VP1 and out of study area
	20/10/2015	1	Non-breeding	Meadow Pipit	2	18:15						PB4 (bare peat); fly out from bare peat over VP1
	21/10/2015	2	Non-breeding	Meadow Pipit	2	07:55						PB4 (bare peat); fly over bare peat to S of VP2
	21/10/2015	2	Non-breeding	Meadow Pipit	11	09:07						WS2 (mature birch willow scrub); fly from vegetation in front of VP2 and out of study area
	21/10/2015	2	Non-breeding	Meadow Pipit	4	09:14						PB4 (bare peat); WS1 (birch scrub); fly into study area, over bare peat in front of VP2 and into vegetation
	21/10/2015	2	Non-breeding	Meadow Pipit	9	10:02						PB4 (bare peat); flying over bare peat
	21/10/2015	2	Non-breeding	Meadow Pipit	1	11:45						PB4 (bare peat); flies over bare peat to SW of VP2
	22/10/2015	4&5	Non-breeding	Meadow Pipit	2	12:15						WS1 (birch scrub); PB4 (bare peat); flying across scrub and bare peat in front of VP4/5

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	22/10/2015	4&5	Non-breeding	Meadow Pipit	1	12:35						WS1 (birch scrub); PB4 (bare peat); flying across bare peat from scrub in front of VP4/5
	22/10/2015	4&5	Non-breeding	Meadow Pipit	1	13:00						PB4 (bare peat); WS1 (birch scrub); flying over bare peat and scrub in front of VP4/5
	22/10/2015	4&5	Non-breeding	Meadow Pipit	10	13:10						PB4 (bare peat); WS1 (birch scrub); flying over bare peat and scrub in front of VP4/5
	22/10/2015	4&5	Non-breeding	Meadow Pipit	1	15:44						WS1 (birch scrub); audible from scrub near railway in front of VP4/5
	22/10/2015	4&5	Non-breeding	Meadow Pipit	1	16:16						PB4 (bare peat); flying and calling over bare peat in front of VP4/5
	22/10/2015	4&5	Non-breeding	Meadow Pipit	2	16:30						PB1 (remnant high bog); heard calling from heather behind VP4/5
	22/10/2015	4&5	Non-breeding	Meadow Pipit	2	16:37						PB4 (bare peat with pioneer dry grassland and pioneer poor fen mosaic); calling from grass in front of VP4/5
	22/10/2015	4&5	Non-breeding	Meadow Pipit	1	17:07						WS1 (birch scrub); calling - not visible - from scrub in front of VP4/5
	26/11/2015	4&5	Non-breeding	Meadow Pipit	1	08:58						PB1 (remnant high bog); calling from heather

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	26/11/2015	4&5	Non-breeding	Meadow Pipit	10	09:17						PB4 (bare peat); fly over cut bog, circle twice and land
	26/11/2015	4&5	Non-breeding	Meadow Pipit	1	09:28						PB4 (bare peat); calling from cut bog
	26/11/2015	4&5	Non-breeding	Meadow Pipit	2	09:32						PB4 (bare peat); calling from cut bog
	26/11/2015	4&5	Non-breeding	Meadow Pipit	5	10:35						PB4 (bare peat); flying over bare peat
	26/11/2015	4&5	Non-breeding	Meadow Pipit	16	10:59						PB4 (bare peat); flies over bare peat
	26/11/2015	4&5	Non-breeding	Meadow Pipit	1	11:26						PB1 (remnant high bog); audible from heather behind VP4/5
	26/11/2015	4&5	Non-breeding	Meadow Pipit	1	12:09						PB1 (remnant high bog); calling from heather behind VP4/5
	26/11/2015	4&5	Non-breeding	Meadow Pipit	1	12:26						PB4 (bare peat); fly over bare peat
	26/11/2015	4&5	Non-breeding	Meadow Pipit	7	12:49						PB4 (bare peat); flies over bare peat
	26/11/2015	4&5	Non-breeding	Meadow Pipit	1	14:17						flying and calling
	01/12/2015	1	Non-breeding	Meadow Pipit	2	08:34						fly through study area
	01/12/2015	1	Non-breeding	Meadow Pipit	5	09:25						flies over study area
	01/12/2015	1	Non-breeding	Meadow Pipit	5	09:50						flying over study area calling
	01/12/2015	1	Non-breeding	Meadow Pipit	7	09:57						flying and calling over study area
	01/12/2015	1	Non-breeding	Meadow Pipit	9	10:20						fly over study area
	01/12/2015	1	Non-breeding	Meadow Pipit	1	11:35						WS1 (birch scrub); calling from

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
												vegetation
	01/12/2015	1	Non-breeding	Meadow Pipit	5	12:44						fly through study area
	01/12/2015	1	Non-breeding	Meadow Pipit	18	14:06						WS1 (birch scrub); flock leaves vegetation and study area to W
	16/12/2015	4&5	Non-breeding	Meadow Pipit	1	11:15						PB4 (bare peat); flies over bare peat and over VP
	16/12/2015	4&5	Non-breeding	Meadow Pipit	1	11:24						PB1 (remnant high bog); PB4 (bare peat); flies from heather and onto peat
	17/12/2015	2	Non-breeding	Meadow Pipit	1	09:05						PB4 (bare peat); flies over VP calling
	17/12/2015	2	Non-breeding	Meadow Pipit	3	10:15						fly over study area and out of study area to E
	21/12/2015	1	Non-breeding	Meadow Pipit	1	10:54						flying over study area N to S
	21/12/2015	1	Non-breeding	Meadow Pipit	2	10:57						WS1 (birch scrub); flying over scrub SW to NE
	27/01/2016	1	Non-breeding	Meadow Pipit	1	08:22						flying W and out of study area
	27/01/2016	1	Non-breeding	Meadow Pipit	1	08:56						calls audible
	27/01/2016	1	Non-breeding	Meadow Pipit	12	11:37						flying around study area and land on ground vegetation briefly twice
	28/01/2016	2	Non-breeding	Meadow Pipit	1	11:10						PB4 (bare peat with pioneer dry grassland and pioneer poor fen mosaic); lifts from bare peat and grass and flies up high

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												(above 10m) and off study area to W
	28/01/2016	2	Non-breeding	Meadow Pipit	1	15:15						audible
	28/01/2016	4&5	Non-breeding	Meadow Pipit	2	16:01						PB4 (bare peat); flying over bare peat near VP
	28/01/2016	2	Non-breeding	Meadow Pipit	17	16:46						PB4 (bare peat); flock lifts from bare peat and flies W
	28/01/2016	2	Non-breeding	Meadow Pipit	1	16:52						offsite - audible behind VP
	25/02/2016	4&5	Non-breeding	Meadow Pipit	1	11:01						PB1 (remnant high bog); behind (E) of VP
324	01/12/2015	1	Non-breeding	Mute Swan	2	08:13	15	5	10			<b>PB4 (bare peat with pioneer poor fen and temporary standing water); fly in from W (Ballycon) and land next to WS flock, 20-25m. 15 seconds in study area</b>
325	01/12/2015	1	Non-breeding	Mute Swan	2	08:49	120		75	45		<b>PB4 (bare peat with pioneer poor fen and temporary standing water); after foraging for 35 mins, pair leave and fly N, gaining height of 40-45m</b>
326	01/12/2015	1	Non-breeding	Mute Swan	2	13:54	40	15	25			come from S (where Whooper Swan flock is) and fly over quarry out of sight at 18m

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327	24/02/2016	1	Non-breeding	Mute Swan	2	16:57	180		90	90		flew across the study area at 20-30m high S.180 seconds spent within study area
328	25/02/2016	4&5	Non-breeding	Mute Swan	2	07:57	50	50				PB4 (bare peat); flew N across bog over peat at 9m
318	29/03/2016	1	Both (overlap)	Mute Swan	1	09:19	60			60		individual commuting NW to SE/E over study area. Goes out of view at powerstation
319	29/03/2016	1	Both (overlap)	Mute Swan	1	09:37	55			55		likely the same individual as before returns E to W and circles at the quarry before going out of view. 55 seconds spent within study area
320	30/03/2016	2	Both (overlap)	Mute Swan	4	15:48						offsite - flew in from N and settled in Lough Aisling. Did not fly within study area
321	30/03/2016	2	Both (overlap)	Mute Swan	2	16:10	20	20				PB4 (bare peat); descend into area of bare peat from 2-4m high. 20 seconds spent within study area
322	30/03/2016	2	Both (overlap)	Mute Swan	2	19:04	120		120			PB4 (bare peat); flew E over bare peat at 11m high
323	23/05/2016	2	Breeding	Mute Swan	1	08:31						offsite - moving locations around Lough Aisling, behind VP2. Flight lasts 13 seconds

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
374	08/07/2016	1	Breeding	Northern Lapwing	3	11:08	89	29	45	15	0	
	18/03/2014	2	Both (overlap)	Northern Lapwing	4							displaying in SW sector of study area, no flightline available
007	23/03/2015	1	Both (overlap)	Northern Lapwing	2							displaying in SW sector of study area
007	13/04/2015	1	Breeding	Northern Lapwing	1+	16:04						present in likely nesting area
007	14/04/2015	6	Breeding	Northern Lapwing	4	11:30						two pairs for 3hr duration of watch. Some displaying. Also harassed by Hooded Crow
007	15/04/2015	6	Breeding	Northern Lapwing	4							two pairs present in study area
007	15/05/2015	6	Breeding	Northern Lapwing	4							two active pairs displaying for watch duration of 3hrs
007	19/05/2015	6	Breeding	Northern Lapwing	4							present in same area as on 15 May
007	10/06/2015	6	Breeding	Northern Lapwing	4							present in same area as on 19 May
363	01/12/2015	1	Non-breeding	Northern Lapwing	80	08:21	80			80		circling over N margin, 80-100m. Flying in study area for 80s out of 200s
364	01/12/2015	1	Non-breeding	Northern Lapwing	60	08:58						offsite - circling off study area to S of Cloncreen, between 25-175m for 80 seconds
	01/12/2015	1	Non-breeding	Northern Lapwing	50	09:24						offsite - circling off study area to N of Cloncreen for 50

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
												seconds, too distant to map
365	01/12/2015	1	Non-breeding	Northern Lapwing	80	10:20						offsite - rise from area off study area S of Cloncreen and circle for 180 seconds
366	01/12/2015	1	Non-breeding	Northern Lapwing	80	12:16						offsite - circling off study area S of Cloncreen for 240 seconds
367	01/12/2015	1	Non-breeding	Northern Lapwing	100	12:32						offsite - circling off study area S of Cloncreen for 120 seconds
368	01/12/2015	1	Non-breeding	Northern Lapwing	90	11:55						offsite - circling off study area S of Cloncreen for 240 seconds
369	16/12/2015	4&5	Non-breeding	Northern Lapwing	100	12:34						offsite - flock circles and lands, outside study area to S. Flight lasts 20 seconds
006	16/12/2015	4&5	Non-breeding	Northern Lapwing	100	12:34						offsite - grounded flock
371	28/01/2016	2	Non-breeding	Northern Lapwing	150	15:24						offsite - circling off study area to NW of Cloncreen for 60 seconds
372	24/02/2016	1	Non-breeding	Northern Lapwing	4	13:09	90		45	45		PB4 (bare peat with pioneer dry grassland and pioneer poor fen mosaic); flew in front of VP and in a NW direction at 10-30m high
373	24/02/2016	1	Non-breeding	Northern Lapwing	2	16:37	30		30			PB4 (bare peat); flew over VP1 at

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
												13-15m high. 30 seconds spend within study area
329	29/03/2016	1	Both (overlap)	Northern Lapwing	1	13:10	60		60			PB4 (bare peat with pioneer poor fen); display flight in SE of study area. Dives up and down displaying between 5m and 20m
330	29/03/2016	1	Both (overlap)	Northern Lapwing	1	13:24	10	10				PB4 (bare peat with pioneer poor fen); same individual display flying between 5m and 10m high
331	28/04/2016	1	Breeding	Northern Lapwing	2	18:48	45	15		30		took off from the ground, circled a little and settled back down
332	28/04/2016	1	Breeding	Northern Lapwing	3		10		5	5		flying W (towards Ballycon). Flight lasts 15 seconds, 10 seconds of which are within study area
333	28/04/2016	1	Breeding	Northern Lapwing	2	17:15	20	10		10		fly in from W (Ballycon). Flight lasts 30 seconds. 20 seconds within study area
334	28/04/2016	1	Breeding	Northern Lapwing	1	19:43	25			25		flew W (towards Ballycon). Flight lasts 30 seconds. 25 seconds within study area
335	28/04/2016	1	Breeding	Northern Lapwing	2		30	30				took off from the ground, circled a little and settled back down

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336	28/04/2016	1	Breeding	Northern Lapwing	1	19:54	10	5		5		flew in from W (Ballycon). Flight lasts 15 seconds, 10 seconds of which are within study area
337	28/04/2016	1	Breeding	Northern Lapwing	2		30	30				took off from the ground, circled a little and settled back down
338	28/04/2016	1	Breeding	Northern Lapwing	2	19:03	30	15		15		took off from the ground, circled a little and settled back down
339	28/04/2016	1	Breeding	Northern Lapwing	4	19:21	60	15		45		took off from the ground, circled a little and settled back down
340	22/05/2016	1	Breeding	Northern Lapwing	2	16:12	32		2	30		PB4 (bare peat); mobbing BZ
341	22/05/2016	1	Breeding	Northern Lapwing	2	16:49	16		1	15		PB4 (bare peat); no displaying or calling
342	22/05/2016	1	Breeding	Northern Lapwing	2	18:11	72		42	30		PB4 (bare peat); brief call and display
343	22/05/2016	1	Breeding	Northern Lapwing	2	18:15	10	10				PB4 (bare peat); brief movement at approximately 5m
344	22/05/2016	1	Breeding	Northern Lapwing	1	18:31	46		46			PB4 (bare peat); flying over cutaway bog
345	22/05/2016	1	Breeding	Northern Lapwing	5	18:58	182		32	150		PB4 (bare peat); flying over cutaway peat together. No calling but brief flight displays observed. However, unlikely to be the breeding territory as the

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												habitat is unsuitable (ash repository)
346	22/05/2016	1	Breeding	Northern Lapwing	1	19:47	11	11				PB4 (bare peat); flying at approximately 5m
347	22/05/2016	1	Breeding	Northern Lapwing	2	20:46	156		156			PB4 (bare peat); display flight throughout
348	22/05/2016	1	Breeding	Northern Lapwing	1	22:04	14			14		PB4 (bare peat); fox travelled through and was mobbed by a single Lapwing briefly
349	13/06/2016	1	Breeding	Northern Lapwing	1	16:02	22	22				PB4 (bare peat with pioneer poor fen); flying just above the ground - moving location
350	13/06/2016	1	Breeding	Northern Lapwing	3	16:52	48	9	9	30		PB4 (bare peat with pioneer poor fen); circling over territory and calling briefly before landing again
351	13/06/2016	1	Breeding	Northern Lapwing	2	19:11	84	42	42			PB4 (bare peat with pioneer poor fen); pair in flight, calling and diving at ground predator (presumably)
352	13/06/2016	1	Breeding	Northern Lapwing	2	19:47	64	64				pair mobbing Grey Heron in a drain
353	13/06/2016	1	Breeding	Northern Lapwing	1	20:26	56	56				flying in pursuit of Grey Heron (referenced above)
354	13/06/2016	1	Breeding	Northern Lapwing	1	20:51	10	5	5			PB4 (bare peat with pioneer poor

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												fen); moving locations in territory
355	13/06/2016	1	Breeding	Northern Lapwing	1	21:48	9	9				PB4 (bare peat with pioneer poor fen); moving locations in territory
409	08/07/2016	1	Breeding	Peregrine Falcon	1	14:21	256	0	0	121	135	
386	13/10/2013	2	Non-breeding	Peregrine Falcon	2	09:50	180	60	60	60		BL3 (works area); pair perched on roof of station and then flew over bog, 0-50m high. 60 seconds within study area
387	14/10/2013	4&5	Non-breeding	Peregrine Falcon	1	11:08	660	220	220	220		PB4 (peat stockpile); perched on peat stockpile, then flew across study area, 0-150m high
388	16/01/2014	1	Non-breeding	Peregrine Falcon	1	10:01	90	30	30	30		PB4 (bare peat with temporary standing water); flying and hunting, 0-50m high
389	15/02/2014	1	Non-breeding	Peregrine Falcon	1	12:10	60	20	20	20		PB1 (remnant high bog); female flew across bog to powerstation, 0-50m high
390	23/03/2015	2	Both (overlap)	Peregrine Falcon	1	14:08	60			60		likely a male - flying over SW sector of study area

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391	13/04/2015	2	Breeding	Peregrine Falcon	2	08:36	90			45	45	probable pair flying close together over N boundary and out of study area in NW direction, 100-200m high
	13/04/2015	2	Breeding	Peregrine Falcon	1	09:56						PB4 (peat stockpile); male perched on peat mound for 24mins and still present at the end of survey
392	15/04/2015	1	Breeding	Peregrine Falcon	1	08:04						offsite - flying E just out of study area, 50-100m high, for 30 seconds
393	10/06/2015	6	Breeding	Peregrine Falcon	1	15:01	45	15	15	15		male landed with prey item (pigeon) , 0-50m high
	10/06/2015	1	Breeding	Peregrine Falcon	1	10:12						offsite - female flew W of study area, 50-100m high
394	29/06/2015	4&5	Breeding	Peregrine Falcon	2	07:55	90			45	45	probably pair flying leisurely high over study area, 100-200m high
396	14/07/2015	2	Breeding	Peregrine Falcon	2	08:24	60			60		adult female and probable young in N end of study area and flew NW out of study area, 50-100m high
397	30/09/2015	1	Non-breeding	Peregrine Falcon	1	18:31	23	3	20			Peregrine involved in brief tussle with a Kestrel at up to 20 m height before flying off low (3m) NW

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398	02/10/2015	4&5	Non-breeding	Peregrine Falcon	1	16:38	6	2	2	2		BL3 (meteorological mast); WS2 (mature birch scrub); flying from perch on mast to scrub
399	04/10/2015	2	Non-breeding	Peregrine Falcon	2	08:43	10		8	2		flying E away from VP
400	04/10/2015	2	Non-breeding	Peregrine Falcon	1	10:00	6			6		BL3 (communications tower); flying to perch on tower
	04/10/2015	2	Non-breeding	Peregrine Falcon	1	08:22						BL3 (meteorological mast); perched on top of mast. Flew off in pursuit of another PE that passed the tower (see following entry for flightline)
402	20/10/2015	1	Non-breeding	Peregrine Falcon	2	13:26	30	15	15			PB4 (bare peat with pioneer dry grassland); BL3 (communications tower); foraging low (below 10m) and fly up to perch on tower
403	20/10/2015	1	Non-breeding	Peregrine Falcon	1	14:30	15			15		BL3 (meteorological mast); flies up to perch on mast
404	20/10/2015	1	Non-breeding	Peregrine Falcon	1	14:39	15	10	5			BL3 (meteorological mast); same individual as before leaves mast to forage

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405	21/10/2015	2	Non-breeding	Peregrine Falcon	1	09:42	30		15	15		PB4 (bare peat); circles mast and moves S over study area, 20-50m
	22/10/2015	4&5	Non-breeding	Peregrine Falcon	1	17:15						calling - not visible
406	01/12/2015	1	Non-breeding	Peregrine Falcon	1	10:47	10			10		BL3 (meteorological mast); flies up to perch on mast
407	01/12/2015	1	Non-breeding	Peregrine Falcon	1	10:50	10			10		BL3 (meteorological mast); same individual leaves mast after 3 mins
	01/12/2015	1	Non-breeding	Peregrine Falcon	1	12:20						calling from middle of study area (to E of VP1). Not visible
408	25/02/2016	4&5	Non-breeding	Peregrine Falcon	1	10:19	10	10				PB4 (bare peat and peat stockpile); perched on peat stockpile from 07:56 to 10:19 preening feather, ect. Dipped behind stockpile out of view at 1m high
	29/03/2016	1	Both (overlap)	Peregrine Falcon	1	09:59						BL3 (meteorological mast); perched on top of mast until survey end
375	30/03/2016	4&5	Both (overlap)	Peregrine Falcon	1	14:02	20		20			PB4 (bare peat and peat stockpile); flies in from W at 20m and descends to perch of peat stockpile

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376	30/03/2016	4&5	Both (overlap)	Peregrine Falcon	1	14:22	10	10				PB4 (bare peat and peat stockpile); after 20mins perched, flies 5m high to a new stockpile and perches again, preening
377	30/03/2016	4&5	Both (overlap)	Peregrine Falcon	1	15:01	5	5				WS2 (mature birch willow scrub); perches on tree 7m high for 5mins, then drops into woodland behind
378	24/05/2016	4&5	Breeding	Peregrine Falcon	1	17:03	117		57	60		PB4 (bare peat); landed briefly on bog and left behind prey item (feral pigeon)
379	24/05/2016	4&5	Breeding	Peregrine Falcon	1	17:27						offsite - hunting over bog and woodland. Descends into trees. Flight lasts 112 seconds
380	24/05/2016	4&5	Breeding	Peregrine Falcon	1	18:19	42			42		WS1 (birch scrub); GA1 (agricultural grassland); PB1 (remnant high bog); hunting before returning to smoke tower at powerstation. Flight lasts 209 seconds. 59 seconds are spent flying at 25-175m and 150 seconds above 175m. 42 seconds spend within study area

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
381	24/05/2016	4&5	Breeding	Peregrine Falcon	1	20:43						offsite - perches on smoke tower of powerstation. In flight for 17 seconds
	15/06/2016	4&5	Breeding	Peregrine Falcon	2							offsite - pair observed on top of chimney until 08:48 which short flights were observed away from possible nest site. At 09:30, two work men climbed tower to carry out maintainance until 12:15. During theis time, the female circled the tower top calling constantly. Both male and female were agitated though the male kept a greater distance and left the site occasionally. Shortly after workers leave, both birds return. However, no signs of female tending to chicks or incubation
382	11/07/2016	4&5	Breeding	Peregrine Falcon	2	17:14	14	14	0	0	0	PB4 (Cutover bog). Adult and juvenile flying low (0-5m) and landing on peat mound.

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383	11/07/2016	4&5	Breeding	Peregrine Falcon	2	17:26	18	18	0	0	0	PB4 (Cutover bog), WS1 (Scrub). Adult leaves perch and is followed by juvenile
384	11/07/2016	4&5	Breeding	Peregrine Falcon	1	17:49	214	0	19	195	0	BL3 (Buildings and artificial surfaces), G (Grassland), WD4 (Conifer plantation). Adult flying off site around chimney tower at electricity station (probable nest site)
385	12/08/2016	2	Breeding	Peregrine Falcon	2	12:18	26	26	0	0	0	PB4, (Cutover bog). One individual chasing another over cutover and along peat rows. Probably adult and juvenile
	30/03/2016	2	Both (overlap)	Pied Wagtail	1	13:15						PB4 (bare peat); perched and foraging
	20/10/2015	1	Non-breeding	Pied Wagtail	2	15:35						WL2 (treeline vegetation); flying around study area boundary, from roadway
	26/11/2015	4&5	Non-breeding	Pied Wagtail	1	09:55						WS2 (mature birch willow scrub); audible from vegetation
	01/12/2015	1	Non-breeding	Pied Wagtail	2	10:49						PB4 (bare peat); foraging on disturbed peat in front of VP1
	25/02/2016	2	Non-breeding	Pied Wagtail	1	07:59						offsite - singing behind VP

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
	20/10/2015	1	Non-breeding	Reed Bunting	1	16:43						WS1 (scrub); WL2 (treeline); fly from vegetation, over VP1, to boarder vegetation and treeline
	21/10/2015	2	Non-breeding	Reed Bunting	1	10:45						WS1 (birch scrub); flies out of vegetation and scrub and out of study area over VP
	14/04/2015	6	Breeding	Ringed Plover	1	11:30						<b>audible. Not visible</b>
	15/05/2015	6	Breeding	Ringed Plover	2							<b>pair present in SW sector of study area. Unable to map location accurately</b>
410	30/03/2016	4&5	Both (overlap)	Ringed Plover	1	15:07	5	5				<b>PB4 (bare peat); low, short flight 0.5m high, foraging and moving around peat</b>
411	30/03/2016	4&5	Both (overlap)	Ringed Plover	1	15:44	20		20			<b>PB4 (bare peat with temporary standing water); low, short flight, moving around peat to forage</b>
412	30/03/2016	4&5	Both (overlap)	Ringed Plover	3	15:52	180	120	60			<b>PB4 (bare peat with pioneer dry grassland and pioneer poor fen mosaic); antagonistic interaction between 3. Chase each other in circles 2m to 20m high. Dominance displays on the</b>

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												ground after landing
012	30/03/2016	4&5	Both (overlap)	Ringed Plover	3	15:52						territorial behaviour - indicates breeding territory
414	30/03/2016	4&5	Both (overlap)	Ringed Plover	2	15:58	5		5			PB4 (bare peat with temporary standing water); two return to original pool at 15m and begin foraging, with successful feeding evident
415	30/03/2016	4&5	Both (overlap)	Ringed Plover	1	16:26	10	10				PB4 (bare peat with two puddles of temporary standing water approximately 5X10m in size); has a bird bath and flies into another puddle and forages
416	30/03/2016	4&5	Both (overlap)	Ringed Plover	1	16:34	5	5				PB4 (bare peat with temporary standing water); flies from one puddle to another, low to ground at 1m
417	30/03/2016	4&5	Both (overlap)	Ringed Plover	2	16:36	15	10	5			PB4 (bare peat with temporary standing water); returns from puddle back to original location at 12m to 1m

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
418	30/03/2016	4&5	Both (overlap)	Ringed Plover	1	17:33	20	5	15			PB4 (bare peat with temporary standing water); flies up to 13m and descends, in a loop from puddle, over peat and heather and back to puddle
012	30/03/2016	4&5	Both (overlap)	Ringed Plover	2	16:27						PB4 (bare peat with temporary standing water); roosting and bathing
013	30/03/2016	4&5	Both (overlap)	Ringed Plover	2	16:27						PB4 (bare peat with temporary standing water); roosting and preening and displaying
014	30/03/2016	4&5	Both (overlap)	Ringed Plover	3	19:15						PB4 (bare peat with temporary standing water); 3 confirmed roosting on study area at dusk (2 with head under wing)
015	29/04/2016	4&5	Breeding	Ringed Plover	2	07:33						suspected breeding pair present until the watch finishes at 11:20 (227 minutes)
419	15/06/2016	4&5	Breeding	Ringed Plover	1	07:20	5	5				PB4 (bare peat with pioneer poor fen); observed in flight
420	15/06/2016	4&5	Breeding	Ringed Plover	1	12:38	6	6				PB4 (bare peat with pioneer poor fen); moving location
	29/03/2016	1	Both	Rook	1	08:41						flies NE to SW over

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			(overlap)									study area at 15-20m
	29/03/2016	1	Both (overlap)	Rook	1	11:25						flies across study area S to N
	29/03/2016	1	Both (overlap)	Rook	2	13:12						flying along study area boundary
	30/03/2016	4&5	Both (overlap)	Rook	1	13:23						PB4 (bare peat); flying E to W S of VP
	30/03/2016	2	Both (overlap)	Rook	2	14:49						PB4 (bare peat); flying over
	30/03/2016	2	Both (overlap)	Rook	2	16:29						PB4 (bare peat with pioneer dry grassland and pioneer poor fen mosaic); flying over
	30/03/2016	2	Both (overlap)	Rook	1	17:45						PB4 (bare peat); present
	30/03/2016	2	Both (overlap)	Rook	5	17:51						WD4 (conifer plantation); flies over E boundary near powerstation
	30/03/2016	4&5	Both (overlap)	Rook	1	19:10						offsite - audible behind VP
	20/10/2015	1	Non-breeding	Rook	8	12:54						fly over study area from N to S
	20/10/2015	1	Non-breeding	Rook	2	13:40						fly over study area from N to S
	20/10/2015	1	Non-breeding	Rook	2	16:32						PB4 (bare peat); fly over cut peat, left of VP1
	21/10/2015	2	Non-breeding	Rook	1	10:34						WS1 (birch scrub); on study area boarder calling
	21/10/2015	2	Non-breeding	Rook	1	10:38						PB4 (bare peat); flies through study area in front of VP over bare peat
	21/10/2015	2	Non-breeding	Rook	2	12:30						PB4 (bare peat); WS1 (birch scrub); flies over study

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
												area over bare peat and scrub
	22/10/2015	4&5	Non-breeding	Rook	1	12:44						PB4 (bare peat with pioneer dry grassland and pioneer poor fen mosaic); WS1 (birch scrub); flying across study area
	22/10/2015	4&5	Non-breeding	Rook	2	13:25						PB4 (bare peat with pioneer dry grassland and pioneer poor fen mosaic); WS1 (birch scrub); flying through study area
	22/10/2015	4&5	Non-breeding	Rook	1	17:48						PB4 (bare peat); flying over bare peat at VP4/5, travelling across study area
	26/11/2015	4&5	Non-breeding	Rook	1	09:40						audible
	26/11/2015	4&5	Non-breeding	Rook	2	09:57						commuting over study area calling
	26/11/2015	4&5	Non-breeding	Rook	8	10:10						PB4 (bare peat); flock foraging on bare peat all leave and fly E
	26/11/2015	4&5	Non-breeding	Rook	1	12:58						WS2 (mature birch willow scrub); flies to trees and perches
	26/11/2015	4&5	Non-breeding	Rook	1	14:15						flies over study area S to N
	01/12/2015	1	Non-breeding	Rook	1	08:25						WL2 (treeline vegetation); flying over treeline to N margin

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
	01/12/2015	1	Non-breeding	Rook	3	08:57						WL2 (treeline vegetation); fly over treeline on N margin
	01/12/2015	1	Non-breeding	Rook	1	09:17						WL2 (treeline vegetation); flying over treeline to N margin
	01/12/2015	1	Non-breeding	Rook	3	09:28						WL2 (treeline vegetation); flying over treeline to N margin
	01/12/2015	1	Non-breeding	Rook	1	13:16						WL2 (treeline vegetation); return to original main flock location NE of VP1, flying below 10m
	16/12/2015	4&5	Non-breeding	Rook	2	15:41						fly across study area W to E
	17/12/2015	2	Non-breeding	Rook	1	08:44						flying over study area NW to SE
	17/12/2015	2	Non-breeding	Rook	20	10:10						WS2 (mature birch willow scrub); alights in mature trees on W margin
	17/12/2015	2	Non-breeding	Rook	3	10:11						flies over study area NE to SW and turn W, calling. Displace HC
	21/12/2015	1	Non-breeding	Rook	1	10:38						flies over study area N to S
	21/12/2015	1	Non-breeding	Rook	1	12:50						flies across study area W to S
	27/01/2016	1	Non-breeding	Rook	5	10:19						WL2 (treeline vegetation); perched in a tall tree on N treeline
	27/01/2016	1	Non-breeding	Rook	4	10:30						flying NW to SE

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
	27/01/2016	1	Non-breeding	Rook	6	11:37						flying S to N over study area - two calling and have an aggressive interaction
	27/01/2016	1	Non-breeding	Rook	1	12:30						flying E to W over study area
	27/01/2016	1	Non-breeding	Rook	2	13:30						flying over study area E to N
	28/01/2016	4&5	Non-breeding	Rook	1	15:30						flying along S boundary
	24/02/2016	1	Non-breeding	Rook	100	13:00						flying over N boundary
	24/02/2016	1	Non-breeding	Rook	100	13:04						flying over S boundary
	24/02/2016	1	Non-breeding	Rook	3	14:40						flying over centre and NW of study area
	24/02/2016	1	Non-breeding	Rook	1	15:39						flying over S section
	24/02/2016	1	Non-breeding	Rook	100	16:01						offsite - flying outside E boundary
	25/02/2016	4&5	Non-breeding	Rook	1	08:12						PB4 (bare peat); flying over VP
	25/02/2016	4&5	Non-breeding	Rook	2	10:50						PB4 (bare peat); flying over bare peat mid section
	25/02/2016	2	Non-breeding	Rook	1	11:00						WN7 (bog woodland); PB4 (bare peat); flies along treeline to N, then turns SW and flies over bare peat and off study area
	29/03/2016	1	Both (overlap)	Sky Lark	1	08:45						audible singing within study area
	29/03/2016	1	Both (overlap)	Sky Lark	1	10:49						PB4 (bare peat with pioneer dry grassland and pioneer poor fen

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												mosaic); display flight and song
	30/03/2016	4&5	Both (overlap)	Sky Lark	1	15:20						PB4 (bare peat); display song and flight
	30/03/2016	4&5	Both (overlap)	Sky Lark	1	16:30						PB4 (bare peat with pioneer dry grassland and pioneer poor fen mosaic); display song and flight
	30/09/2015	1	Non-breeding	Sky Lark	2							observed
	29/03/2016	1	Both (overlap)	Song Thrush	1	07:05						WL2 (marginal treeline vegetation); audible singing for survey duration
	27/01/2016	1	Non-breeding	Song Thrush	2	11:50						PB4 (bare peat); fly down from trees to land on bare peat - attracted to male singing
	28/01/2016	2	Non-breeding	Song Thrush	2	15:55						offsite - audible singing behind VP
	25/02/2016	2	Non-breeding	Song Thrush	1	07:37						WS2 (mature birch willow scrub); singing
	30/09/2015	1	Non-breeding	Stonechat	1							observed
	21/10/2015	2	Non-breeding	Stonechat	1	12:50						WS1 (birch scrub); perched on bush in scrub left of VP2
	21/10/2015	2	Non-breeding	Stonechat	2	13:44						PB4 (bare peat with pioneer dry grassland); foraging among regenerating grass in front of VP2 approximately 30m away

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
	24/02/2016	1	Non-breeding	Stonechat	1	17:30						WS2 (mature birch willow scrub); observed
017	13/11/2013	4&5	Non-breeding	Whooper Swan	6	07:30						feeding in SE corner of study area for survey duration (3hrs)
	16/12/2013	1	Non-breeding	Whooper Swan	7	16:10						flock (including birds that arrived at 16:10) foraging on regenerating bare peat for 31mins
423	16/12/2013	1	Non-breeding	Whooper Swan	2	16:10	30	10	10	10		PB4 (bare peat with temporary standing water); flew in from NW into pools within the study to join a flock of five WS already present, 0-50m high. 30 seconds within study area
424	16/12/2013	1	Non-breeding	Whooper Swan	7	16:41	30	10	20			PB4 (bare peat with temporary standing water); party of seven left pools and flew W (toward Ballycon), 0-50m high. 30 seconds within study area
425	16/12/2013	2	Non-breeding	Whooper Swan	1	11:25	40	10	30			flew NW out of study area, 0-50 m high. 40 seconds within study area
	05/01/2014	1	Non-breeding	Whooper Swan	3	17:04	30	10	10	10		three flew in and joined two Whooper Swan already feeding. 0-

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												50m high. 30 seconds within study area
016	05/01/2014	1	Non-breeding	Whooper Swan	5							group observed at 17:04 presumed to roost in study area
017	09/01/2014	2	Non-breeding	Whooper Swan	14	09:30						PB4 (bare peat with temporary standing water); feeding on ponds near VP2, m high
018	02/02/2014	1	Non-breeding	Whooper Swan	39							PB4 (bare peat with temporary standing water); feeding within study area
019	04/02/2014	2	Non-breeding	Whooper Swan	65							PB4 (bare peat with temporary standing water); feeding within study area
020	18/02/2014	1	Non-breeding	Whooper Swan	83	13:20						PB4 (bare peat with temporary standing water); feeding and roosting on wet bog within study area for 1hr
021	18/02/2014	1	Non-breeding	Whooper Swan	81	17:02						PB4 (bare peat with temporary standing water); large herd roosting at darkness on wet bog for last 1hr 30mins of survey
426	26/11/2015	4&5	Non-breeding	Whooper Swan	8	09:01	40	10	30			PB4 (bare peat); fly over cut bog, circle twice and land, up to 25m

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427	26/11/2015	4&5	Non-breeding	Whooper Swan	1	09:27	50	50				1 member of above flock flies away W over study area, below 10m
428	26/11/2015	4&5	Non-breeding	Whooper Swan	7	10:02	80	65	15			remaining 7 of above flock fly W and out of sight, ascending to approximately 18m
429	26/11/2015	4&5	Non-breeding	Whooper Swan	3	10:40	40	40				PB4 (bare peat); foraging flock disturbed by digger passing, flying around low to ground for a short time
430	26/11/2015	4&5	Non-breeding	Whooper Swan	6	11:25	80	80				a flock of 6 arrives, circles and lands somewhere W on study area
431	26/11/2015	4&5	Non-breeding	Whooper Swan	8	11:25	80	80				possibly previous flock of 8 returns - circles and lands somewhere W on study area
432	26/11/2015	4&5	Non-breeding	Whooper Swan	5	12:29	20	5	15			PB4 (bare peat); come from direction of powerstation at 20m and land on bare peat. Spends 20 seconds within study area
433	26/11/2015	4&5	Non-breeding	Whooper Swan	5	13:16	20	10	10			PB4 (bare peat); flock above leaves study area to W and fly out of sight
017	26/11/2015	4&5	Non-breeding	Whooper Swan	3	08:45						PB4 (bare peat with pioneer dry grassland and pioneer poor fen

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												mosaic); foraging on bare peat/regenerating grass around flooded areas
017	26/11/2015	4&5	Non-breeding	Whooper Swan	3	13:30						PB4 (bare peat); flock from this morning still foraging around bare peat
016	30/11/2015	2	Non-breeding	Whooper Swan	24	10:30						PB4 (bare peat with temporary standing water); foraging on PB4 in S section of Cloncreen Bog
434	01/12/2015	1	Non-breeding	Whooper Swan	6	09:15	10	10				PB4 (bare peat with temporary standing water); move around study area, disturbed by workmen, low flight
435	01/12/2015	1	Non-breeding	Whooper Swan	6	09:39	10	10				PB4 (bare peat with temporary standing water); disturbed family above rejoin main flock in low flight
436	01/12/2015	1	Non-breeding	Whooper Swan	6	12:59	30	30				PB4 (bare peat with temporary standing water); return to original main flock location NE of VP1, flying below 10m
437	01/12/2015	1	Non-breeding	Whooper Swan	1	13:09	15	15				PB4 (bare peat with temporary standing water); return to original main flock location

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												NE of VP1, flying below 10m
438	01/12/2015	1	Non-breeding	Whooper Swan	7	13:09	90	90				PB4 (bare peat with temporary standing water); return to original main flock location NE of VP1, flying below 10m
439	01/12/2015	1	Non-breeding	Whooper Swan	7	13:22	90	60	30			PB4 (bare peat with temporary standing water); return to original main flock location NE of VP1, flying up to 15m
440	01/12/2015	1	Non-breeding	Whooper Swan	8	13:44	25	25				PB4 (bare peat with temporary standing water); return to original main flock location NE of VP1, flying below 10m
441	01/12/2015	1	Non-breeding	Whooper Swan	3	14:00	20	20				PB4 (bare peat with temporary standing water); return to original main flock location NE of VP1, flying below 10m
442	01/12/2015	1	Non-breeding	Whooper Swan	3	14:03	20	20				PB4 (bare peat with temporary standing water); return to original main flock location NE of VP1, flying below 10m

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443	01/12/2015	1	Non-breeding	Whooper Swan	10	14:10	20	15	5			PB4 (bare peat with temporary standing water); return to original main flock location NE of VP1, flying up to 15m
444	01/12/2015	1	Non-breeding	Whooper Swan	41	11:49	180	130	50			PB4 (bare peat); flock of 41 move to new location in S of Cloncreen, possibly due to disturbance by workmen. Reach a maximum height of 15-20m
033	01/12/2015	1	Non-breeding	Whooper Swan	41	08:00						PB4 (bare peat with temporary standing water); flock present on arrival at first light, roosting around flood NE of VP1
016	01/12/2015	1	Non-breeding	Whooper Swan	41	11:30						PB4 (bare peat with temporary standing water); flock roosting and foraging
018	17/12/2015	2	Non-breeding	Whooper Swan	3	12:36						PB4 (bare peat); foraging on bare peat - walk out of sight
445	21/12/2015	1	Non-breeding	Whooper Swan	15	10:17	20	20				PB4 (bare peat with temporary standing water); move further away in response to my presence

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446	21/12/2015	1	Non-breeding	Whooper Swan	8	12:18	5	5				PB4 (bare peat with temporary standing water); moving around foraging area in short, low flights up to 5m
447	21/12/2015	1	Non-breeding	Whooper Swan	1	13:01	5	5				PB4 (bare peat with temporary standing water); moving around foraging area in short, low flights up to 5m
448	21/12/2015	1	Non-breeding	Whooper Swan	1	13:37	30	30				PB4 (bare peat with temporary standing water); flies in from S below 10m to join flock already present
449	21/12/2015	1	Non-breeding	Whooper Swan	4	15:40	20	20				PB4 (bare peat with temporary standing water); leave main flock and fly W out of sight
450	21/12/2015	1	Non-breeding	Whooper Swan	8	15:45	20	20				PB4 (bare peat with temporary standing water); leave main flock and fly N in direction of quarry
451	21/12/2015	1	Non-breeding	Whooper Swan	8	16:01	30	30				PB4 (bare peat with temporary standing water); after 20mins, the flock near the quarry rejoins main flock

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452	21/12/2015	1	Non-breeding	Whooper Swan	2	16:10	15	15				PB4 (bare peat with temporary standing water); moving around foraging area in short, low flights up to 5m
453	21/12/2015	1	Non-breeding	Whooper Swan	25	16:13	20	20				PB4 (bare peat with temporary standing water); moving around foraging area in short, low flights up to 5m
016	21/12/2015	1	Non-breeding	Whooper Swan	45	10:17						PB4 (bare peat with temporary standing water); foraging
454	27/01/2016	1	Non-breeding	Whooper Swan	2	08:25	40		20	20		fly in from W (Ballycon) and over study area, landing somewhere to S, out of view, descending from 40m
455	27/01/2016	1	Non-breeding	Whooper Swan	2	08:32	30		30			PB4 (bare peat); pair fly over study area in arc at approximately 20m high to join pair mentioned above to S, out of view. Flight lasts 35 seconds, 30 seconds of which are within study area
456	27/01/2016	1	Non-breeding	Whooper Swan	8	08:42	10	10				PB4 (bare peat); land in NW corner of study area, coming in from W

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												<b>and start foraging on bare peat</b>
457	27/01/2016	1	Non-breeding	Whooper Swan	8	08:42						<b>flock arriving in at 08:42 remains foraging on bare peat and walks out of sight</b>
421	29/03/2016	1	Both (overlap)	Whooper Swan	6	07:06						<b>offsite - audible flying E from Ballycon. Turn S and do not cross into Cloncreen study area. Flightline indicates probable route</b>
	29/03/2016	1	Both (overlap)	Winter Wren	2	07:17						WL2 (marginal treeline vegetation); audible singing from vegetation
	29/03/2016	1	Both (overlap)	Winter Wren	1	11:45						WL2 (marginal treeline vegetation); singing throughout survey
	01/12/2015	1	Non-breeding	Winter Wren	1	08:40						WL2 (treeline vegetation); singing from boundary vegetation
	01/12/2015	1	Non-breeding	Winter Wren	1	11:43						WL2 (treeline vegetation); singing from marginal vegetation
	25/02/2016	2	Non-breeding	Winter Wren	1	07:59						WS2 (mature birch willow scrub); singing
	21/10/2015	2	Non-breeding	Wood Pigeon	4	10:30						
	26/11/2015	4&5	Non-breeding	Wood Pigeon	1	13:26						

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	01/12/2015	1	Non-breeding	Wood Pigeon	2	11:46						
	21/12/2015	1	Non-breeding	Wood Pigeon	1	12:35						
	28/01/2016	2	Non-breeding	Wood Pigeon	1	15:31						
	24/02/2016	1	Non-breeding	Wood Pigeon	1	17:36						
	25/02/2016	2	Non-breeding	Wood Pigeon	1	07:52						
	25/02/2016	4&5	Non-breeding	Wood Pigeon	1	13:16						
	29/03/2016	1	Both (overlap)	Wood Pigeon	1	07:09						
	29/03/2016	1	Both (overlap)	Wood Pigeon	1	12:29						
	30/03/2016	2	Both (overlap)	Wood Pigeon	1	17:16						
	22/05/2016	1	Breeding	Wood Pigeon	2	17:53						
	22/05/2016	1	Breeding	Wood Pigeon	7	18:18						
	22/05/2016	1	Breeding	Wood Pigeon	1	18:22						
	22/05/2016	1	Breeding	Wood Pigeon	1	18:36						
	22/05/2016	1	Breeding	Wood Pigeon	1	18:44						
	22/05/2016	1	Breeding	Wood Pigeon	6	18:53						
	22/05/2016	1	Breeding	Wood Pigeon	1	20:21						
	23/05/2016	2	Breeding	Wood Pigeon	1	05:16	36	36				
	23/05/2016	2	Breeding	Wood Pigeon	3	06:12	18	3	15			

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	23/05/2016	2	Breeding	Wood Pigeon	1	06:32	36	21	15			
	23/05/2016	2	Breeding	Wood Pigeon	1	06:59	37	7	30			
	23/05/2016	2	Breeding	Wood Pigeon	1	08:14	33	18	15			
	23/05/2016	2	Breeding	Wood Pigeon	1	10:03	47		47			
	24/05/2016	4&5	Breeding	Wood Pigeon	3	17:53	12		12			
	14/06/2016	2	Breeding	Wood Pigeon	1	16:57	12	6	6			
	14/06/2016	2	Breeding	Wood Pigeon	8	19:32	52	26	26			
	08/07/2016	1	Breeding	Wood Pigeon	2	11:19	9	1	8	0	0	
	11/07/2016	4&5	Breeding	Wood Pigeon	2	16:47	25	25	0	0	0	PB1 (Raised bog). Flying over off site - suitable breeding habitat
	04/08/2016	1	Breeding	Wood Pigeon	1	19:26	6	0	6	0	0	PB4 (Cutover bog), G (Grassland and marsh). Flying over
	04/08/2016	1	Breeding	Wood Pigeon	1	20:18	18	3	15	0	0	PB4 (Cutover bog), WL2 (Treeline). Flying over (off site) - suitable breeding habitat
	04/08/2016	1	Breeding	Wood Pigeon	1	20:43	16	0	16	0	0	PB4 (Cutover bog), WL2 (Treelines). Flying over (off site) - suitable breeding habitat
	04/08/2016	1	Breeding	Wood Pigeon	1	20:18	18	3	15	0	0	PB4 (Cutover bog), WL2 (Treeline). Flying off site
	04/08/2016	1	Breeding	Wood Pigeon	1	20:43	16	0	16	0	0	PB4 (Cutover bog), WL2 (Treeline).

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	04/08/2016	1	Breeding	Wood Pigeon	1	19:26	6	0	6	0	0	Flying off site PB4 (Cutover bog), G (Grassland and marsh). Flying over site
	11/08/2016	4&5	Breeding	Wood Pigeon	1	08:14	15	15	0	0	0	WL2 (Treeline), PB4 (Cutover bog), G (Grassland and marsh). Flying over suitable breeding habitat
	11/08/2016	4&5	Breeding	Wood Pigeon	2	09:05	7	0	7	0	0	WD4 (Conifer plantation): flying over suitable breeding habitat (off site)
	11/08/2016	4&5	Breeding	Wood Pigeon	2	09:58	52	7	45	0	0	WD4 (Conifer plantation): flying over suitable breeding habitat (off site)
	11/08/2016	4&5	Breeding	Wood Pigeon	1	10:08	19	19	0	0	0	WS1 (Scrub/transitional woodland), WD4 (Conifer plantation). Flying over grassland and into scrub (off site)
	11/08/2016	4&5	Breeding	Wood Pigeon	2	12:23	13	0	13	0	0	G (Grassland and marsh), PB1 (Raised bog), WD4 (Conifer plantation). Flying over (off site)
	11/08/2016	4&5	Breeding	Wood Pigeon	2	12:41	102	0	12	90	0	G (Grassland and marsh), WD4 (Conifer plantation). Flying over suitable breeding habitat
	11/08/2016	4&5	Breeding	Wood Pigeon	1	13:04	23	0	23	0	0	WL2 (Treelines): flying over suitable breeding habitat

Map Ref.	Date	VP	Season	Species	Number of Birds	Time of flight	Duration of flight (s)	Duration (s) in Band 1 (0-10m)	Duration (s) in Band 2 (10-25m)	Duration (s) in Band 3 (PCH 25-175m)	Duration (s) in Band 4 (175m+)	Notes on habitat and activity
	11/08/2016	4&5	Breeding	Wood Pigeon	1	13:36	27	27	0	0	0	G (Grassland and marsh), WL2 (Treeline), WD4 (Conifer plantation). Flying over (off site)
	12/08/2016	2	Breeding	Wood Pigeon	1	10:56	49	0	49	0	0	WS1 (Scrub/transitional woodland), WL2 (Treeline), G (Grassland and marsh). Flying over suitable breeding habitat (on site)
	12/08/2016	2	Breeding	Wood Pigeon	1	11:09	18	18	0	0	0	WS1 (Scrub/transitional woodland), WL2 (Treeline). Flying through scrub and into trees (on site)
	12/08/2016	2	Breeding	Wood Pigeon	1	12:41	8	8	0	0	0	WS1 (Scrub/transitional woodland): flying over suitable breeding habitat (on site)
	12/08/2016	2	Breeding	Wood Pigeon	1	14:50	10	10	0	0	0	WS1 (Scrub/transitional woodland), WL2 (Treeline). Flying over suitable breeding habitat (on site)
	12/08/2016	2	Breeding	Wood Pigeon	1	15:48	47	0	47	0	0	WD4 (Conifer plantation), PB4 (Cutover bog). Flying over suitable breeding habitat (off site)

Habitat codes follow Fossitt (2000) A Guide to Habitats in Ireland. Kilkenny: The Heritage Council

# Map Legend

- Site Boundary
- Proposed Turbine Sites
- Whooper Swan Flightlines

Fig:1 Winter Season 2013/14



Fig 2: Winter Season 2015/16



 McCarthy Keville O'Sullivan	MAP TITLE: <b>Whooper Swan Flightlines</b>		MAP NO.: <b>Figure: 1 &amp; 2</b>	SCALE: <b>1:38000</b>
	PROJECT TITLE: <b>150504 Cloncreen Windfarm</b>		DATE: <b>05-07-2016</b>	
	DRAWING BY: <b>Stephen Corrigan</b>	CHECKED BY: <b>Susan Doyle</b>	ISSUE NO.: <b>150504-2016.07.05</b>	
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## Map Legend

- Site Boundary
- Proposed Turbine Sites
- Whooper Swan Flightlines

Fig:3 Winter Season 2015/16



Fig:4 Breeding Season 2016



 McCarthy Keville O'Sullivan	MAP TITLE: <b>Whooper Swan Flightlines</b>		MAP NO.: <b>Figure: 3 &amp; 4</b>	SCALE: <b>1:38000cm</b>
	PROJECT TITLE: <b>150504 Cloncreen Windfarm</b>		DATE: <b>22-09-2016</b>	
	DRAWING BY: <b>Stephen Corrigan</b>	CHECKED BY: <b>Susan Doyle</b>	ISSUE NO.: <b>150504-2016.09.22</b>	
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## Map Legend




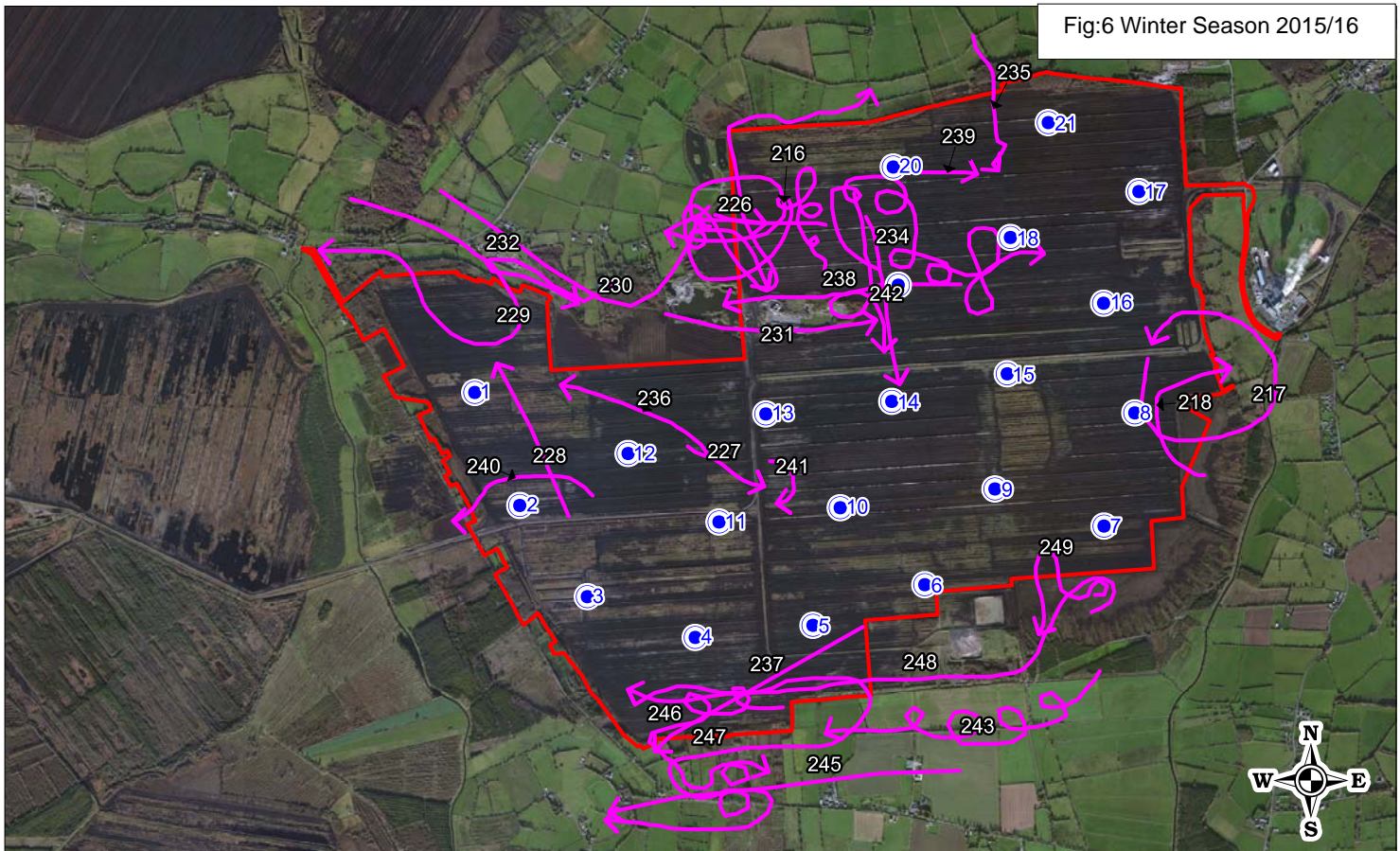
-  Site Boundary
-  Proposed Turbine Sites
-  Golden Plover Flightlines

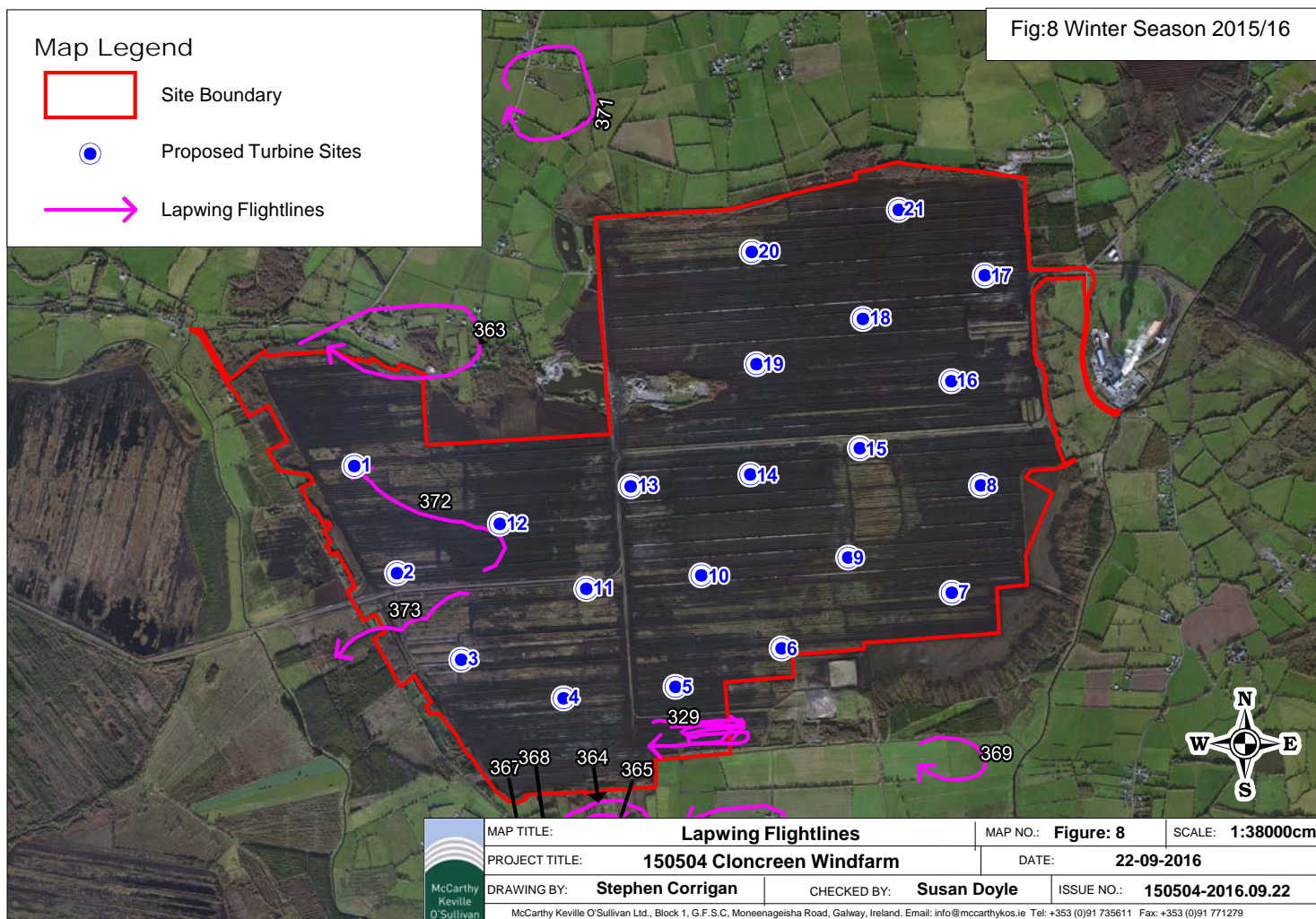
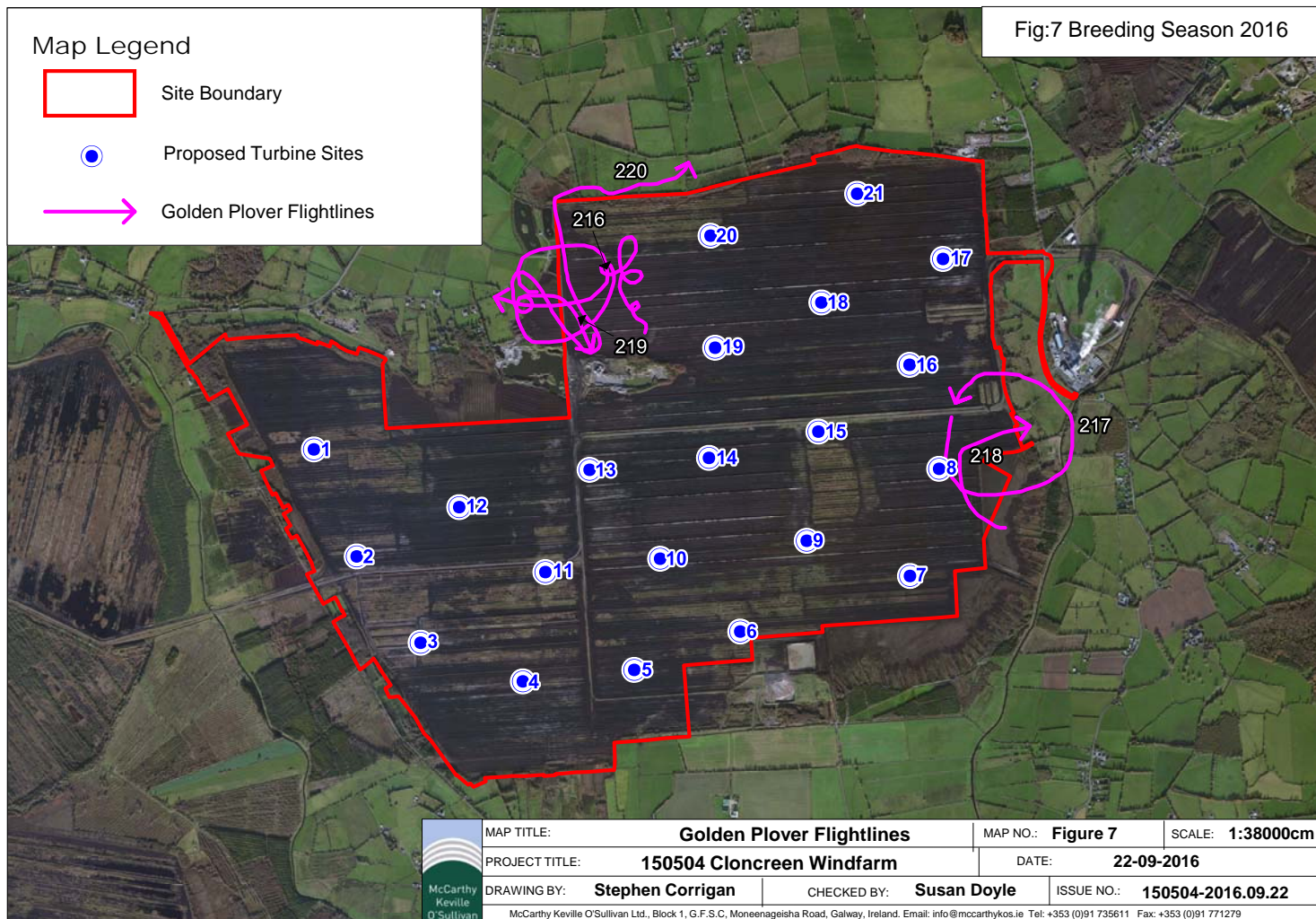
Fig:5 Winter Season 2013/14



Fig:6 Winter Season 2015/16



	MAP TITLE: <b>Golden Plover Flightlines</b>	MAP NO.: <b>Figure: 5&amp;6</b>	SCALE: <b>1:38000cm</b>
	PROJECT TITLE: <b>150504 Cloncreen Windfarm</b>	DATE: <b>22-09-2016</b>	
	DRAWING BY: <b>Stephen Corrigan</b>	CHECKED BY: <b>Susan Doyle</b>	ISSUE NO.: <b>150504-2016.09.22</b>
	<small>McCarthy Keville O'Sullivan Ltd., Block 1, G.F.S.C. Moneenageisha Road, Galway, Ireland. Email: info@mccarthykos.ie Tel: +353 (0)91 735611 Fax: +353 (0)91 771279</small>		



## Map Legend





-  Site Boundary
-  Proposed Turbine Sites
-  Spotted In Area
-  Lapwing Flightlines

Fig: 9 Breeding Season 2015

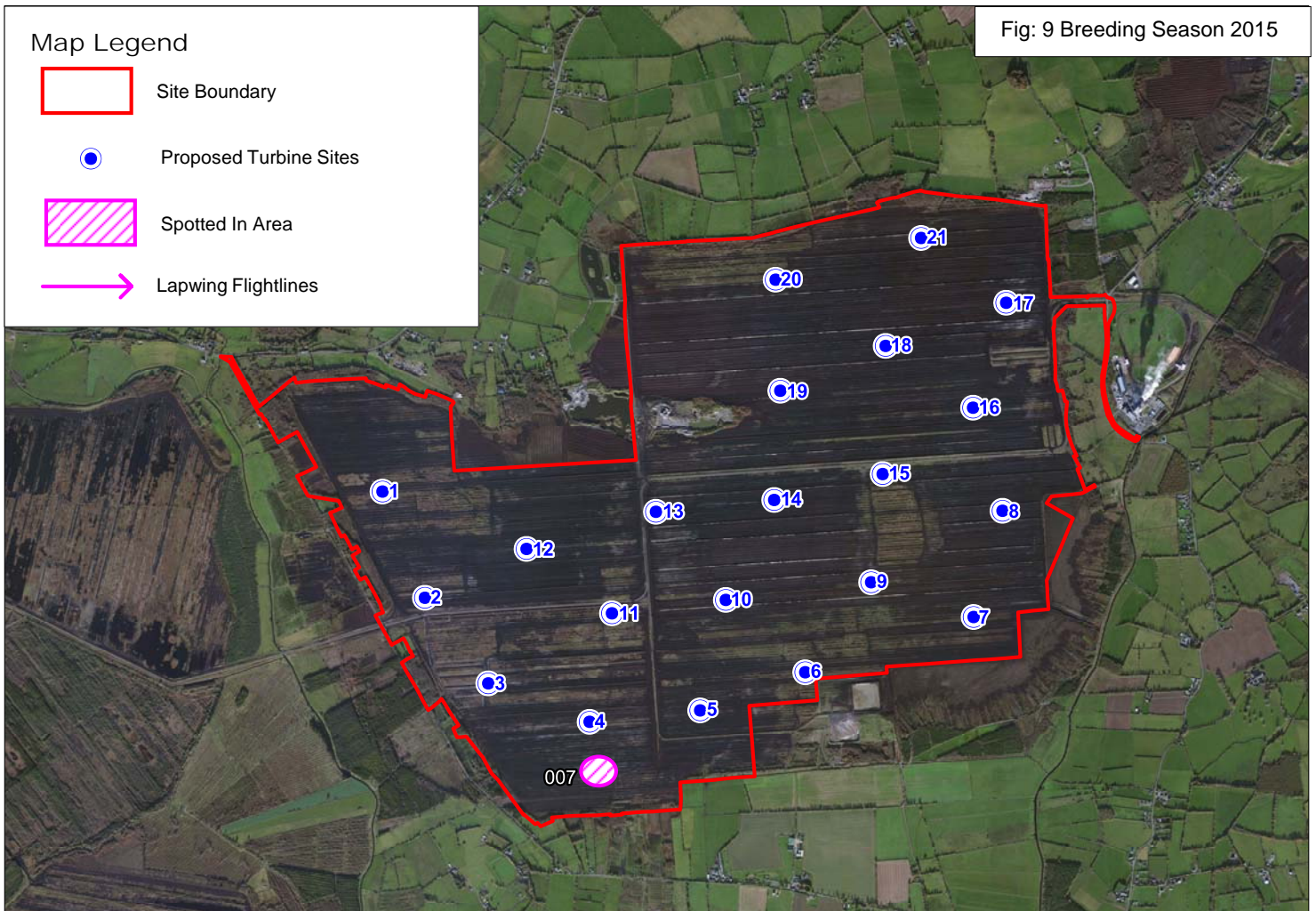
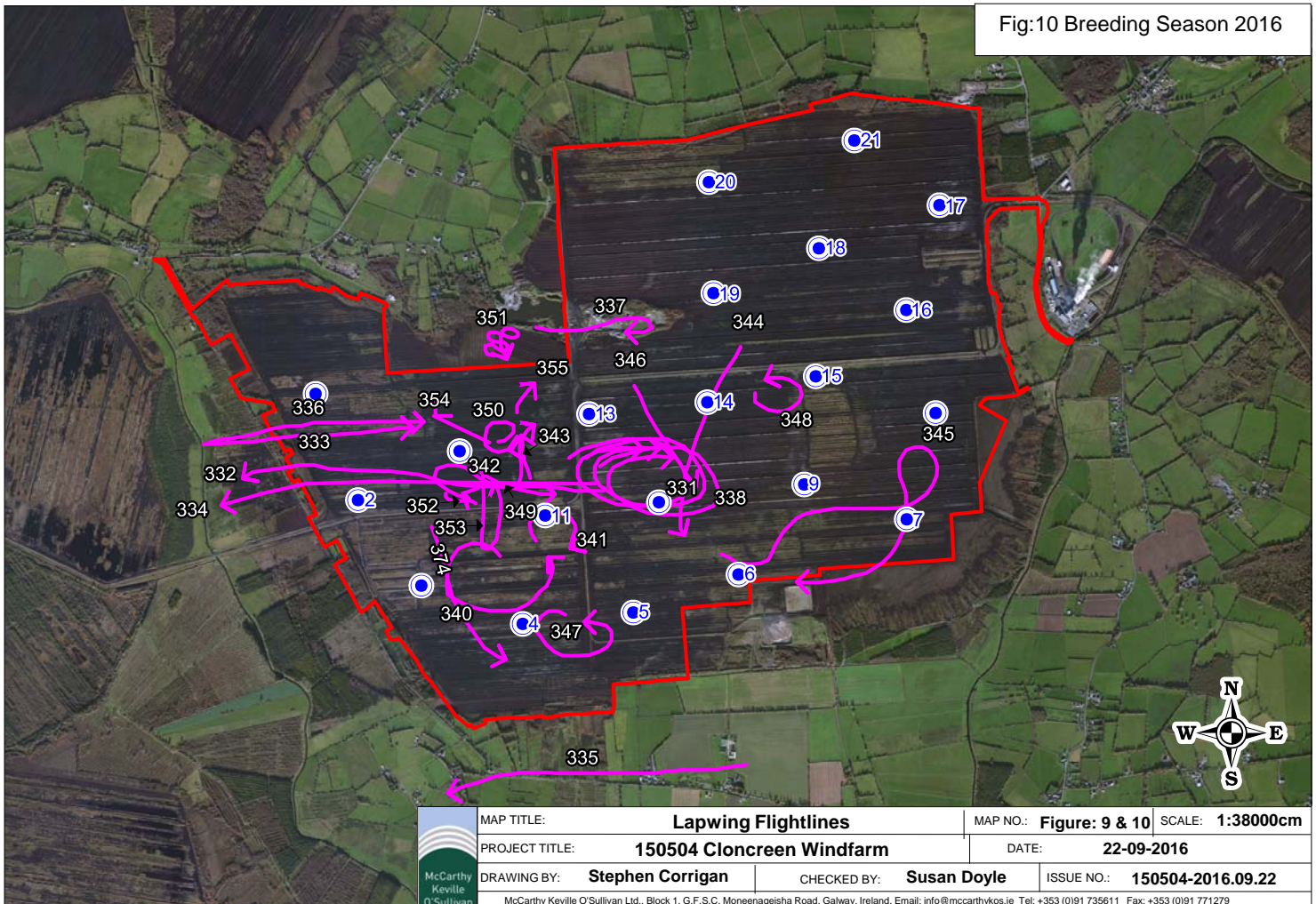


Fig:10 Breeding Season 2016



	MAP TITLE: <b>Lapwing Flightlines</b>	MAP NO.: <b>Figure: 9 &amp; 10</b> SCALE: <b>1:38000cm</b>
	PROJECT TITLE: <b>150504 Cloncreen Windfarm</b>	DATE: <b>22-09-2016</b>
	DRAWING BY: <b>Stephen Corrigan</b>	CHECKED BY: <b>Susan Doyle</b>
	ISSUE NO.: <b>150504-2016.09.22</b>	

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## Map Legend




-  Site Boundary
-  Proposed Turbine Sites
-  Ringed Plover Flightlines

Fig:13 Winter Season 2015/16



Fig:14 Breeding Season 2015



	MAP TITLE: <b>Snipe Flightlines</b>	MAP NO.: <b>Figure:13 &amp; 14</b>	SCALE: <b>1:38000cm</b>
	PROJECT TITLE: <b>150504 Cloncreen Windfarm</b>	DATE: <b>22-09-2016</b>	
	DRAWING BY: <b>Stephen Corrigan</b>	CHECKED BY: <b>Susan Doyle</b>	ISSUE NO.: <b>150504-2016.09.22</b>
	<small>McCarthy Keville O'Sullivan Ltd., Block 1, G.F.S.C. Moneenageisha Road, Galway, Ireland. Email: info@mccarthykos.ie Tel: +353 (0)91 735611 Fax: +353 (0)91 771279</small>		

## Map Legend




-  Site Boundary
-  Proposed Turbine Sites
-  Ringed Plover Flightlines

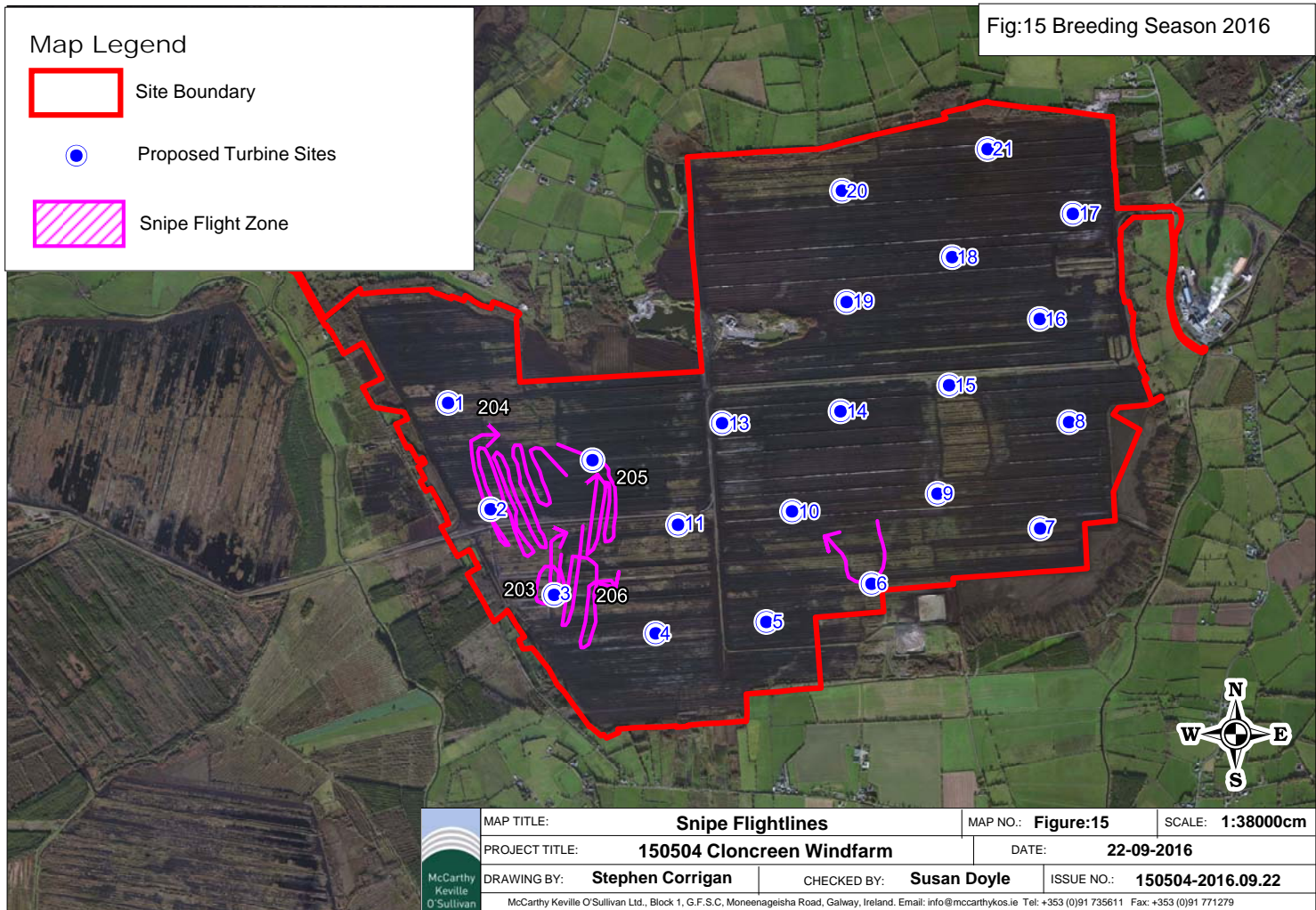
Fig:11 Winter Season 2015/16






Fig:12 Breeding Season 2016



	MAP TITLE: <b>Ringed Plover Flightlines</b>	MAP NO.: <b>Figure: 11 &amp; 12</b>	SCALE: <b>1:38000cm</b>
	PROJECT TITLE: <b>150504 Cloncreen Windfarm</b>	DATE: <b>22-09-2016</b>	
	DRAWING BY: <b>Stephen Corrigan</b>	CHECKED BY: <b>Susan Doyle</b>	ISSUE NO.: <b>150504-2016.09.22</b>
	<small>McCarthy Keville O'Sullivan Ltd., Block 1, G.F.S.C. Moneenageisha Road, Galway, Ireland. Email: info@mccarthykos.ie Tel: +353 (0)91 735611 Fax: +353 (0)91 771279</small>		



## Map Legend

-  Site Boundary
-  Proposed Turbine Sites
-  Woodcock Flightlines

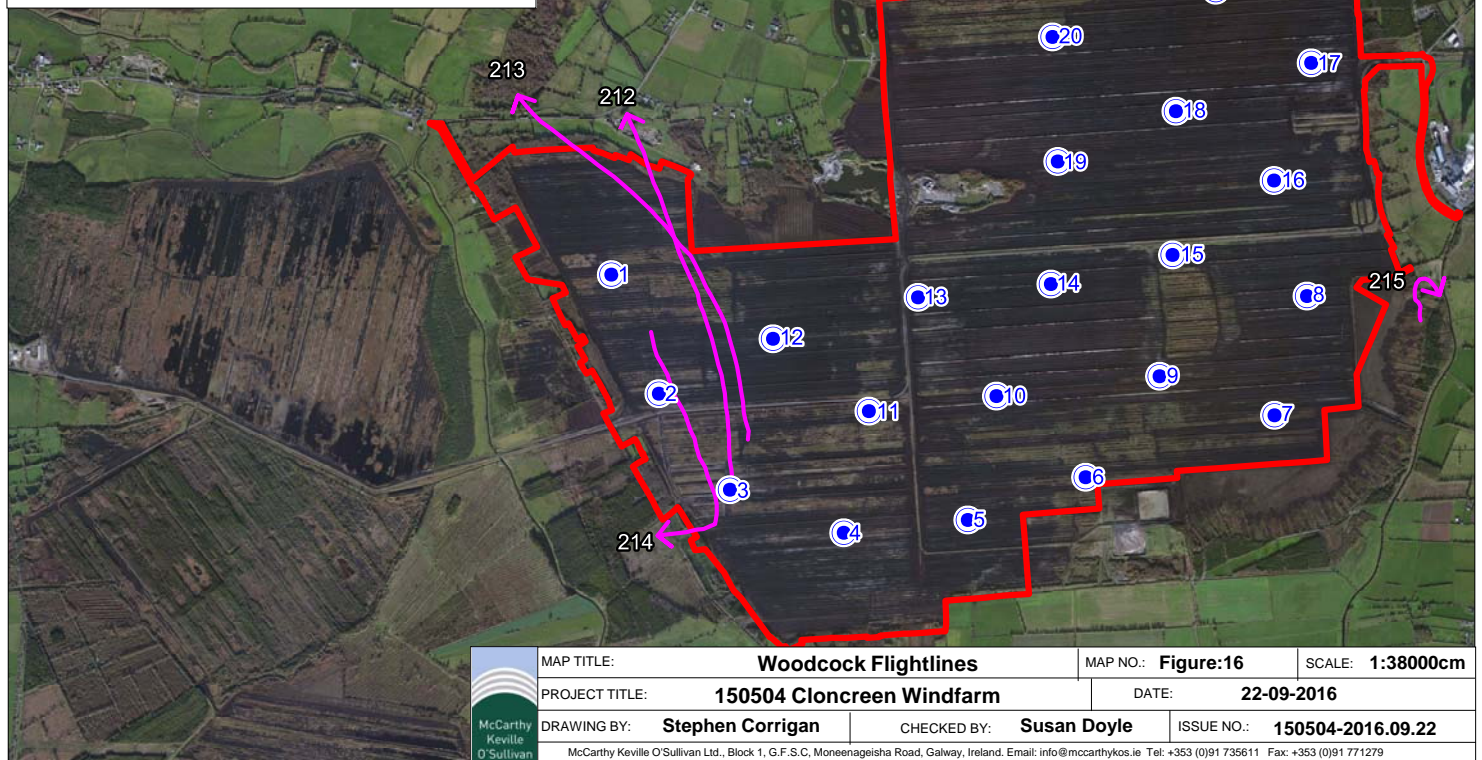





Fig:16 Breeding Season 2016

## Map Legend

-  Site Boundary
-  Proposed Turbine Sites
-  Peregrine Falcon Flightlines

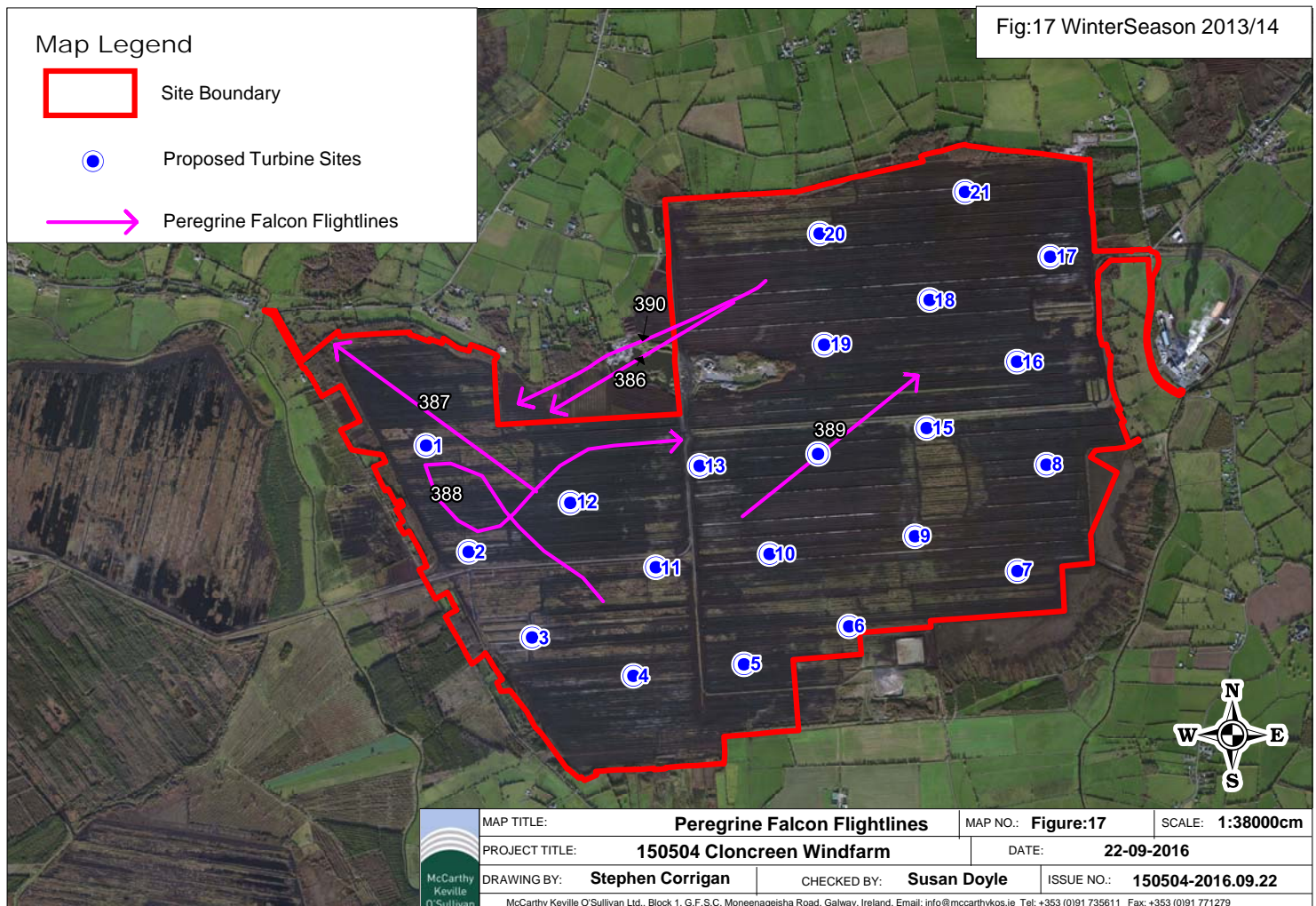


Fig:17 WinterSeason 2013/14

# Map Legend

- Site Boundary
- Proposed Turbine Sites
- Peregrine Falcon Flightlines

Fig:18 Winter Season 2015/16

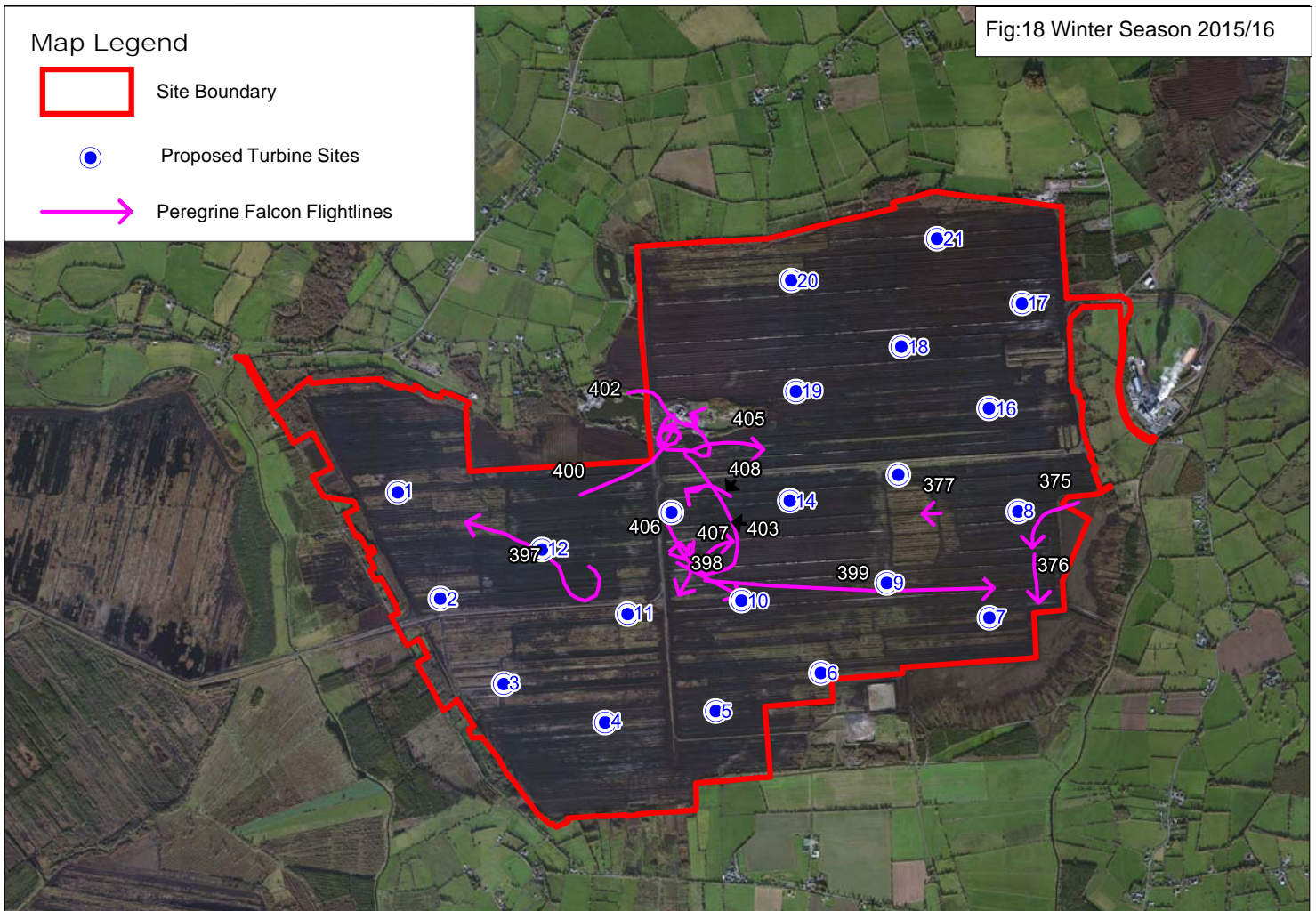
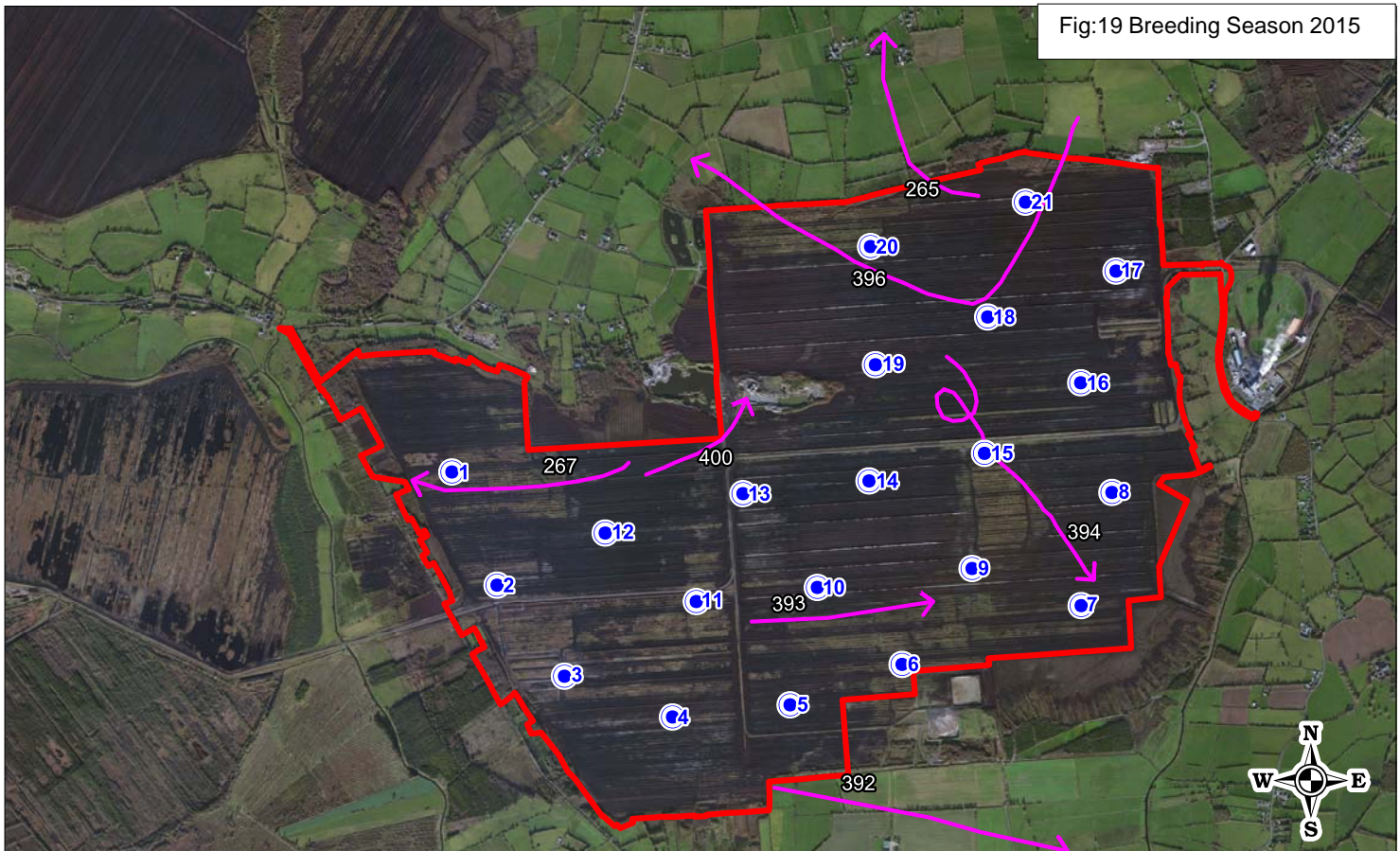
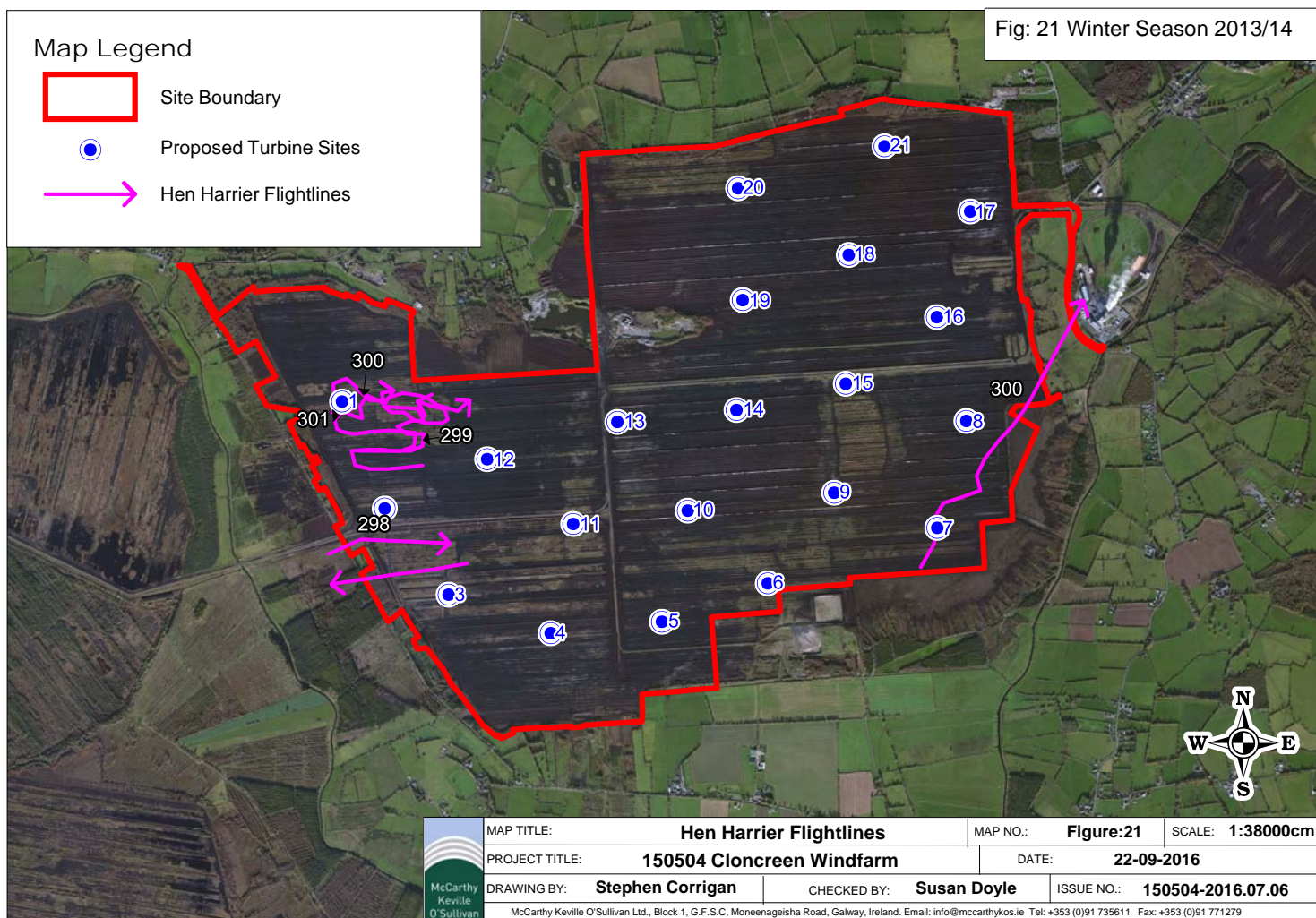
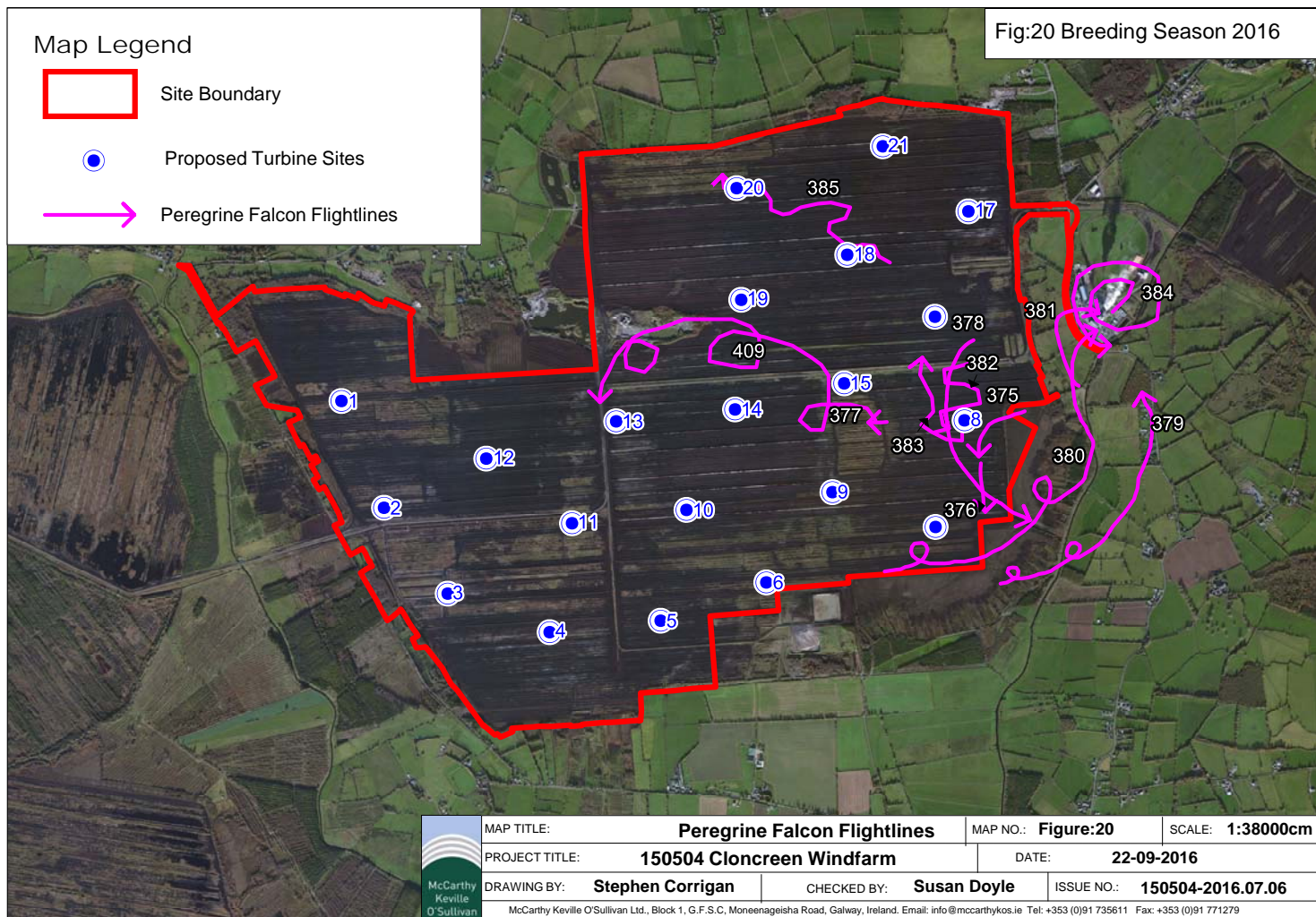


Fig:19 Breeding Season 2015



 McCarthy Keville O'Sullivan	MAP TITLE: <b>Peregrine Falcon Flightlines</b>		MAP NO.: <b>Figure:18 &amp; 19</b>	SCALE: <b>1:38000cm</b>
	PROJECT TITLE: <b>150504 Cloncreen Windfarm</b>		DATE: <b>22-09-2016</b>	
	DRAWING BY: <b>Stephen Corrigan</b>	CHECKED BY: <b>Susan Doyle</b>	ISSUE NO.: <b>150504-2016.09.22</b>	
	McCarthy Keville O'Sullivan Ltd., Block 1, G.F.S.C. Moneenageisha Road, Galway, Ireland. Email: info@mccarthykos.ie Tel: +353 (0)91 735611 Fax: +353 (0)91 771279			



## Map Legend

- Site Boundary
- Proposed Turbine Sites
- Mute Swan Flightlines

Fig:22 Winter Season 2015/16

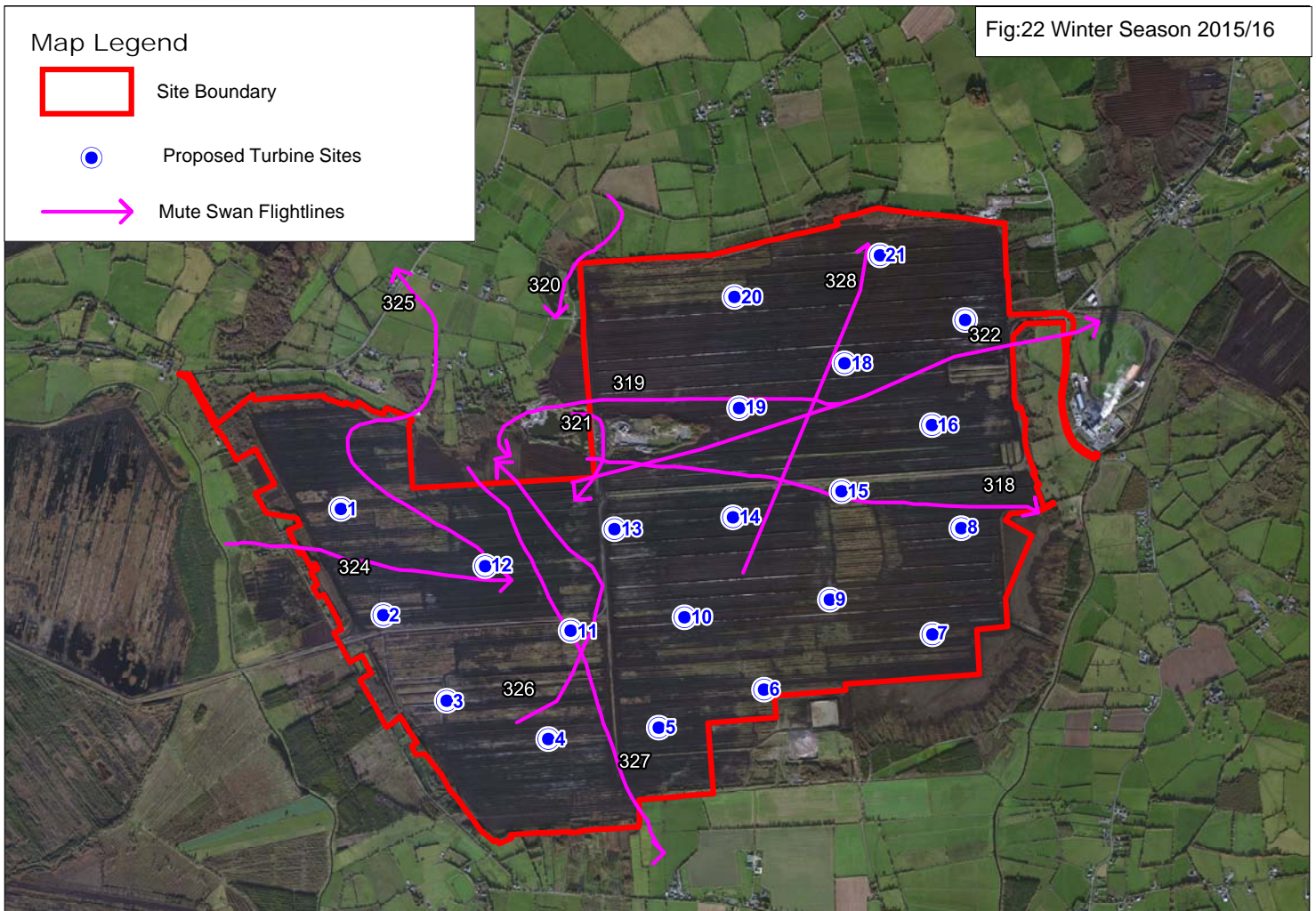
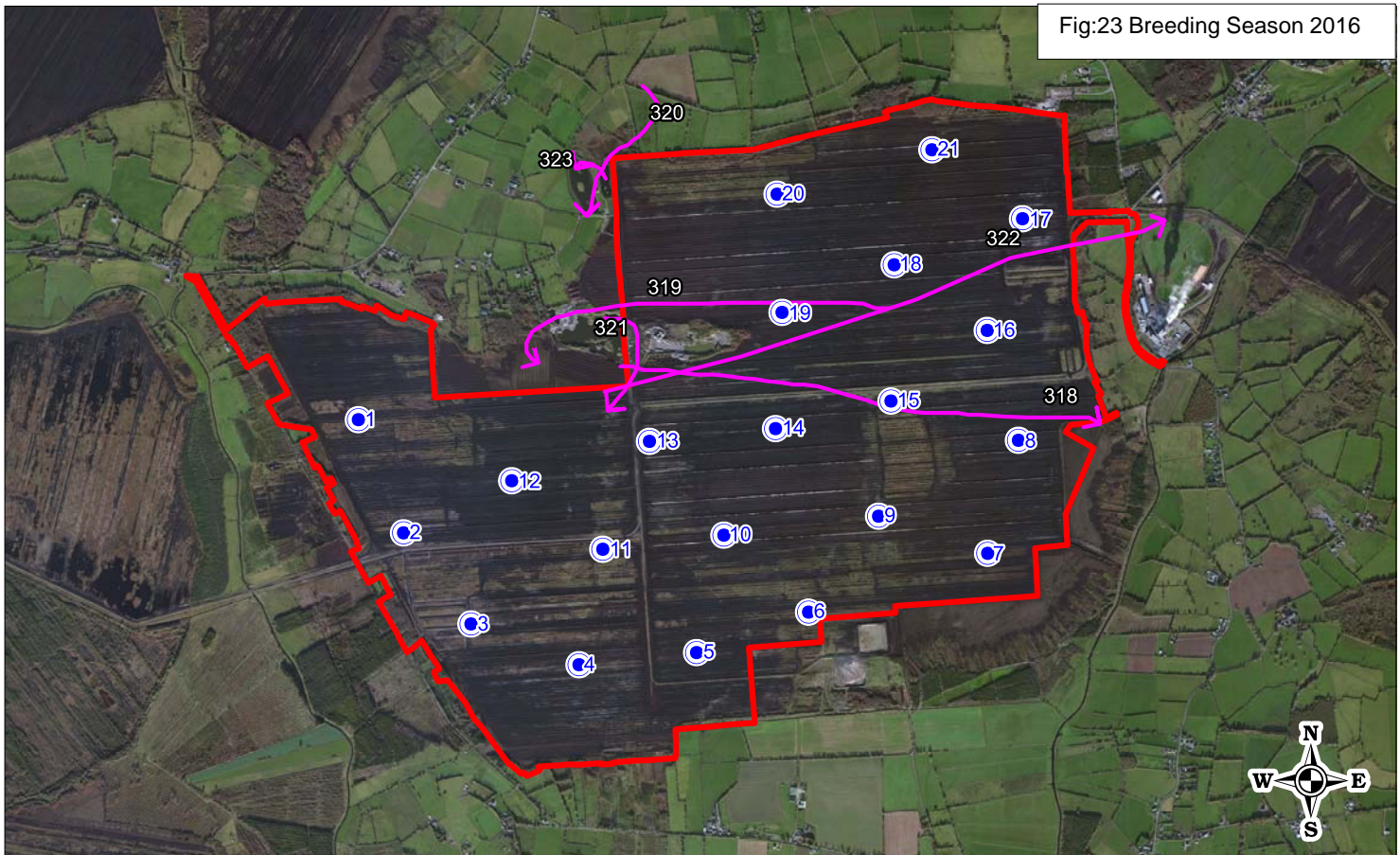


Fig:23 Breeding Season 2016



 McCarthy Keville O'Sullivan	MAP TITLE: <b>Mute Swan Flightlines</b>		MAP NO.: <b>Figure:22 &amp; 23</b>	SCALE: <b>1:38000cm</b>
	PROJECT TITLE: <b>150504 Cloncreen Windfarm</b>		DATE: <b>22-09-2016</b>	
	DRAWING BY: <b>Stephen Corrigan</b>	CHECKED BY: <b>Susan Doyle</b>	ISSUE NO.: <b>150504-2016.09.22</b>	
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## Map Legend

- Site Boundary
- Proposed Turbine Sites
- Grey Heron Flightlines

Fig:24 Winter Season 2015/16

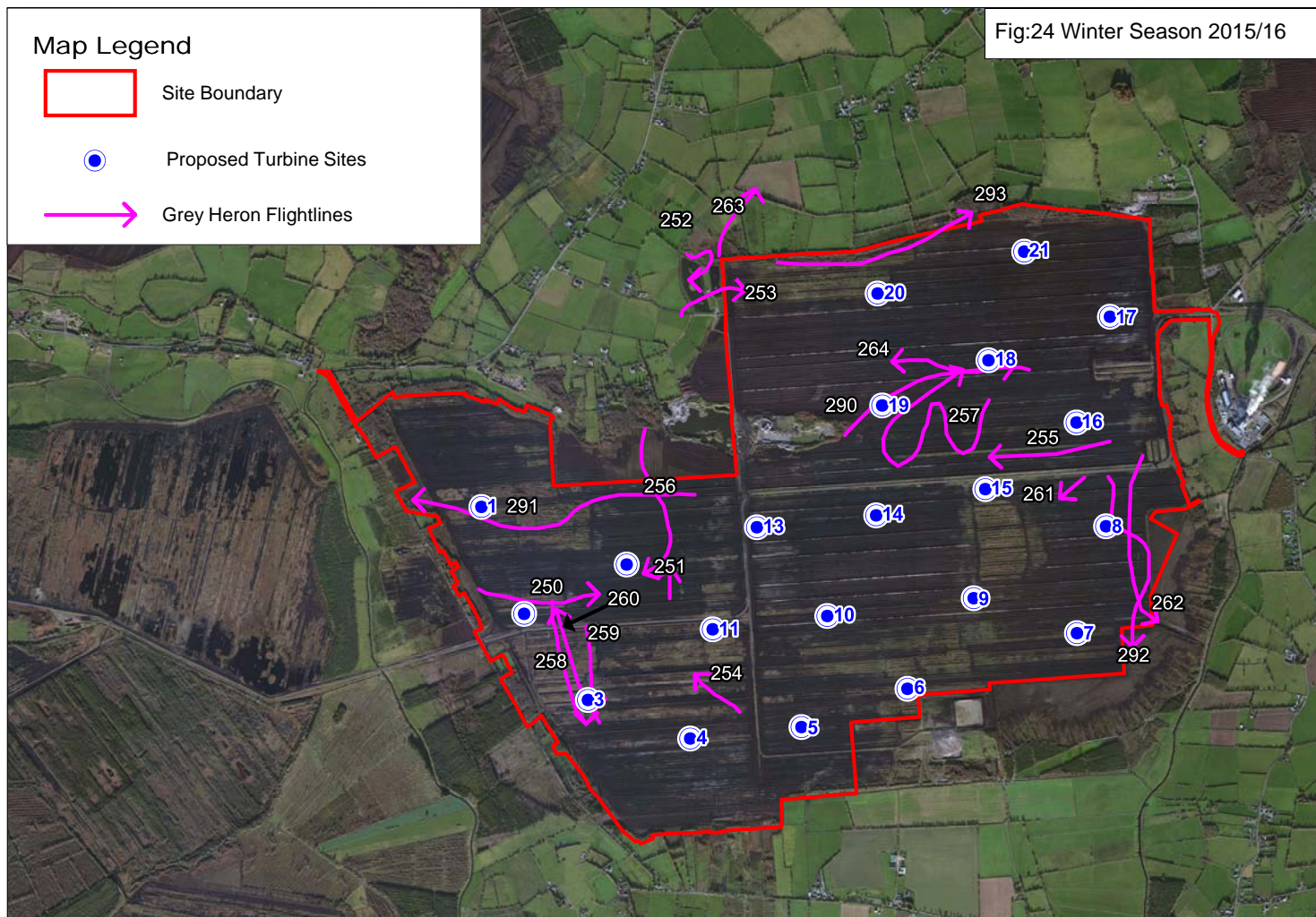
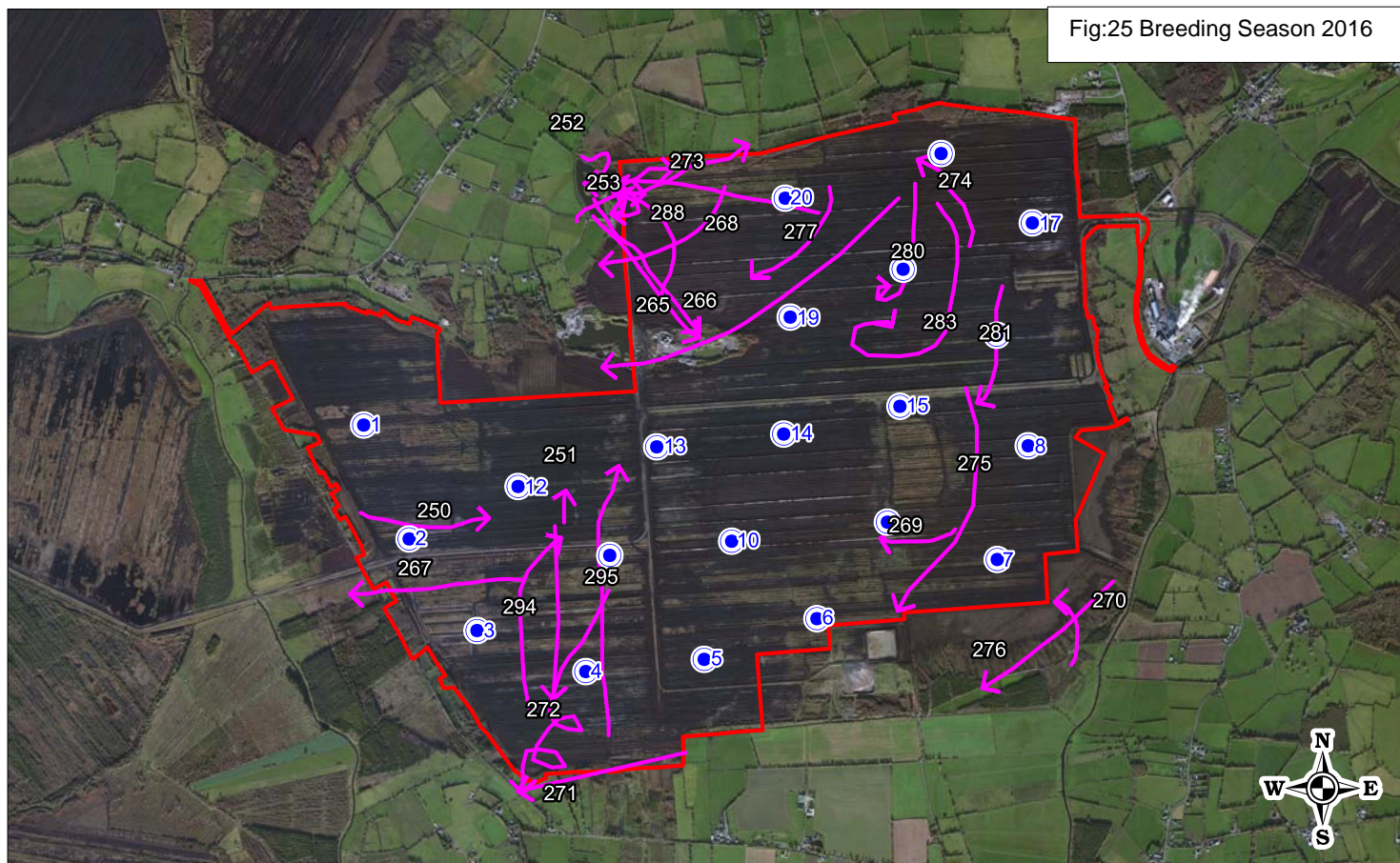


Fig:25 Breeding Season 2016



 McCarthy Keville O'Sullivan	MAP TITLE: <b>Grey Heron Flightlines</b>		MAP NO.: <b>Figure:24 &amp; 25</b>	SCALE: <b>1:38000cm</b>
	PROJECT TITLE: <b>150504 Cloncreen Windfarm</b>		DATE: <b>22-09-2016</b>	
	DRAWING BY: <b>Stephen Corrigan</b>	CHECKED BY: <b>Susan Doyle</b>	ISSUE NO.: <b>150504-2016.09.22</b>	
	McCarthy Keville O'Sullivan Ltd., Block 1, G.F.S.C. Moneenageisha Road, Galway, Ireland. Email: info@mccarthkykos.ie Tel: +353 (0)91 735611 Fax: +353 (0)91 771279			

# Map Legend

- Site Boundary
- Proposed Turbine Sites
- Mallard Flightlines

Fig: 26 Winter Season 2015-16

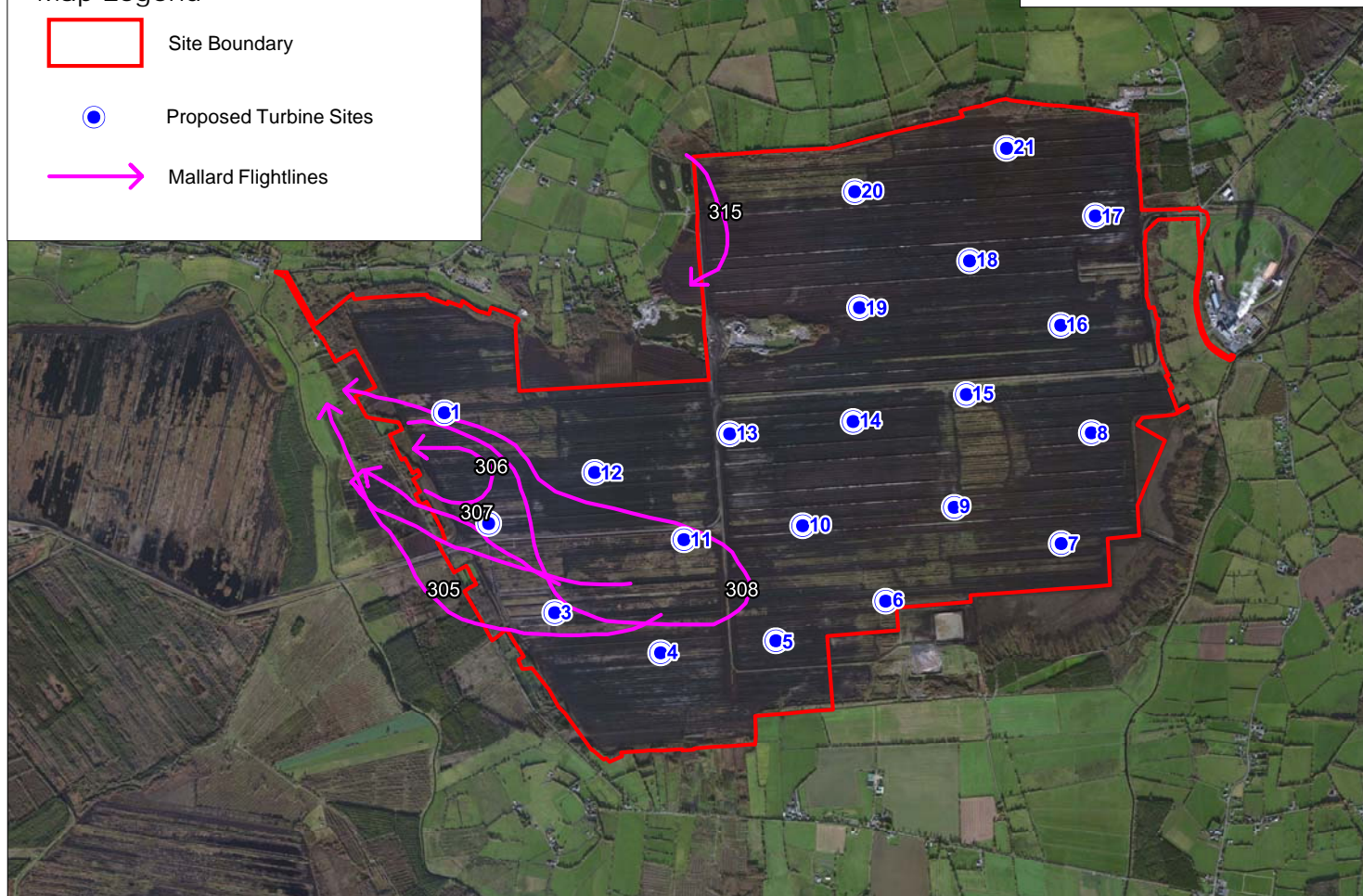
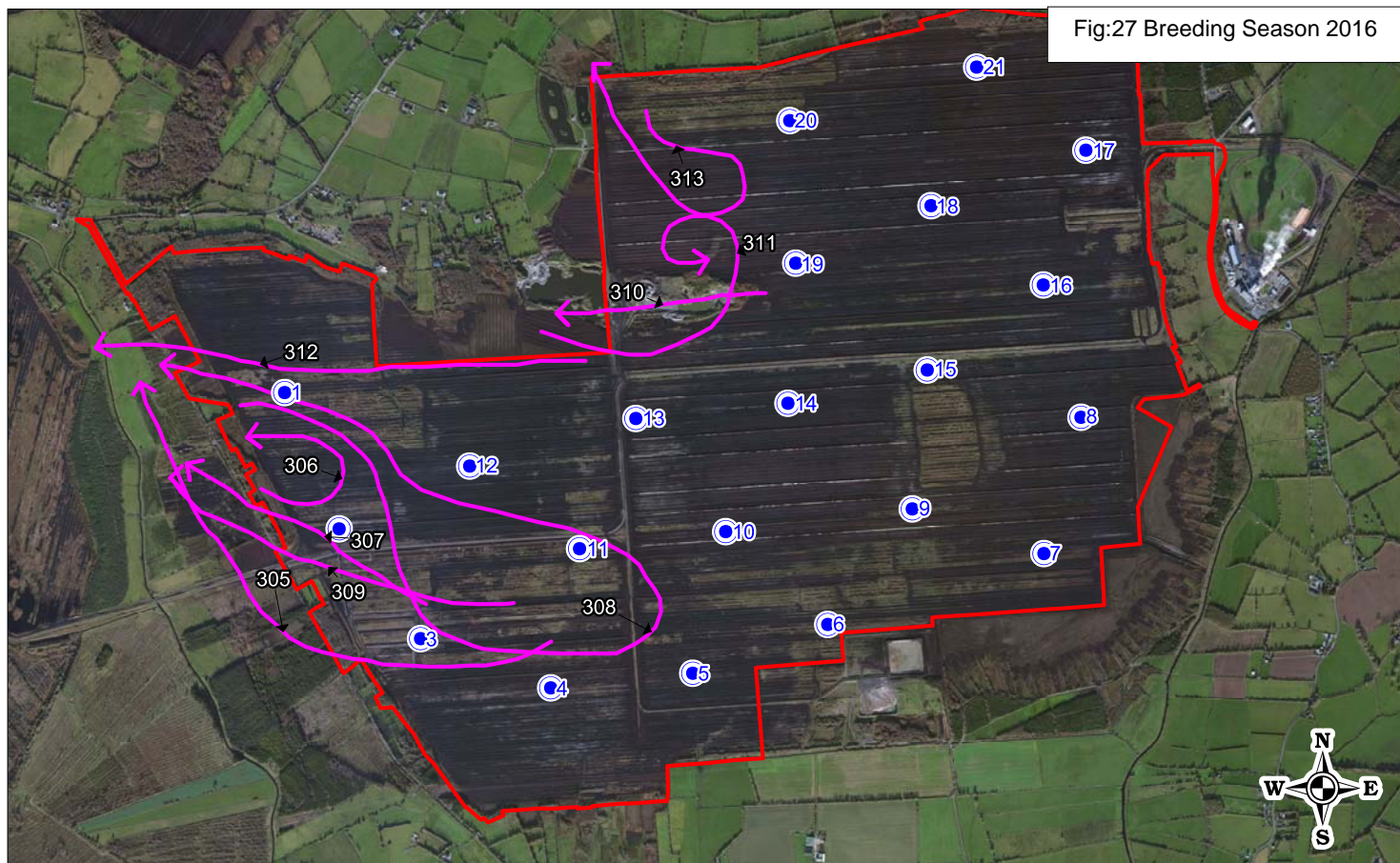


Fig:27 Breeding Season 2016



MAP TITLE: <b>Mallard Flightlines</b>		MAP NO.: <b>Figure: 26&amp;27</b>	SCALE: <b>1:38000cm</b>
PROJECT TITLE: <b>150504 Cloncreen Windfarm</b>		DATE: <b>22-09-2016</b>	
DRAWING BY: <b>Stephen Corrigan</b>	CHECKED BY: <b>Susan Doyle</b>	ISSUE NO.: <b>150504-2016.09.22</b>	
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## Map Legend




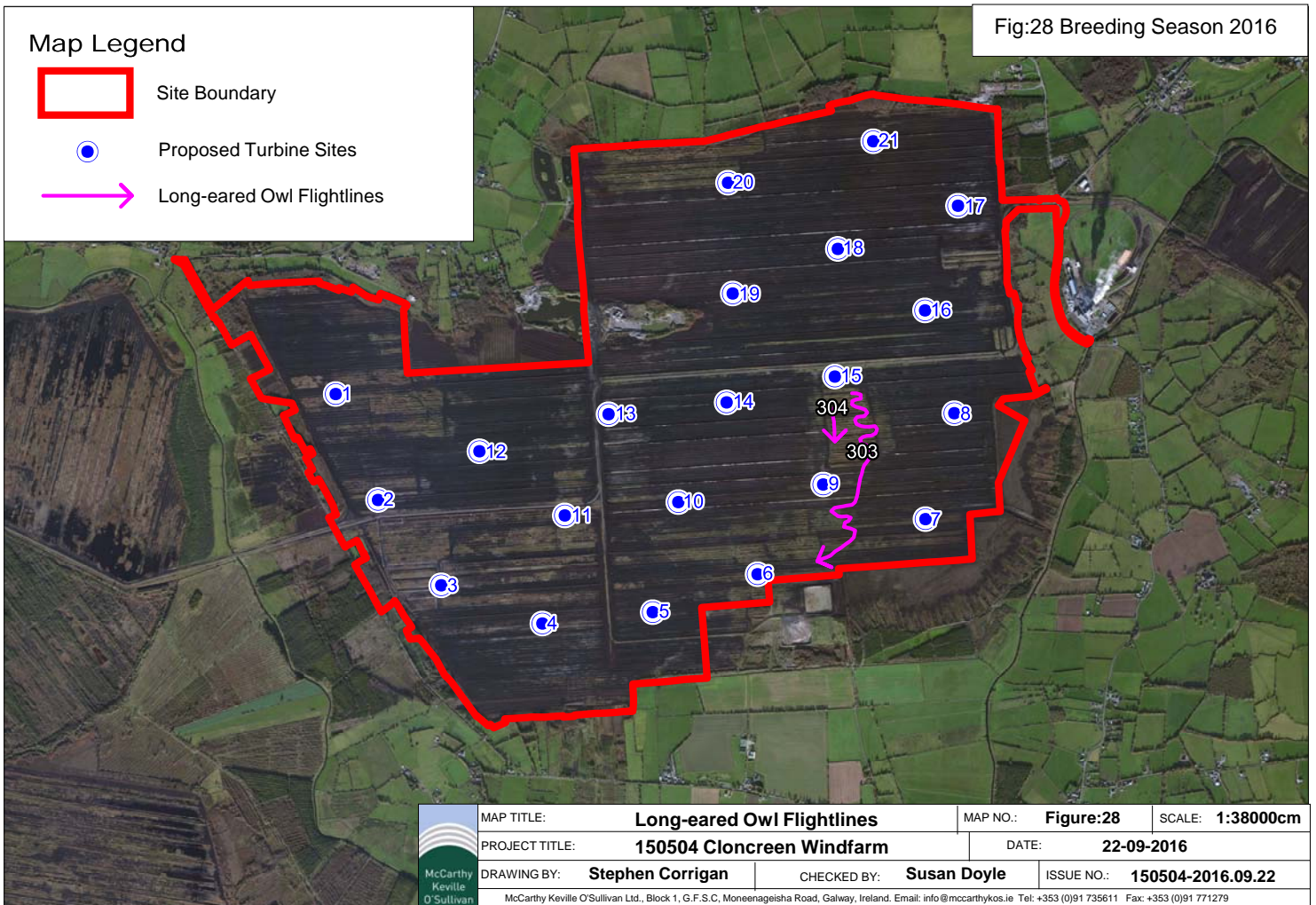
-  Site Boundary
-  Proposed Turbine Sites
-  Long-eared Owl Flightlines

Fig:28 Breeding Season 2016



## Map Legend




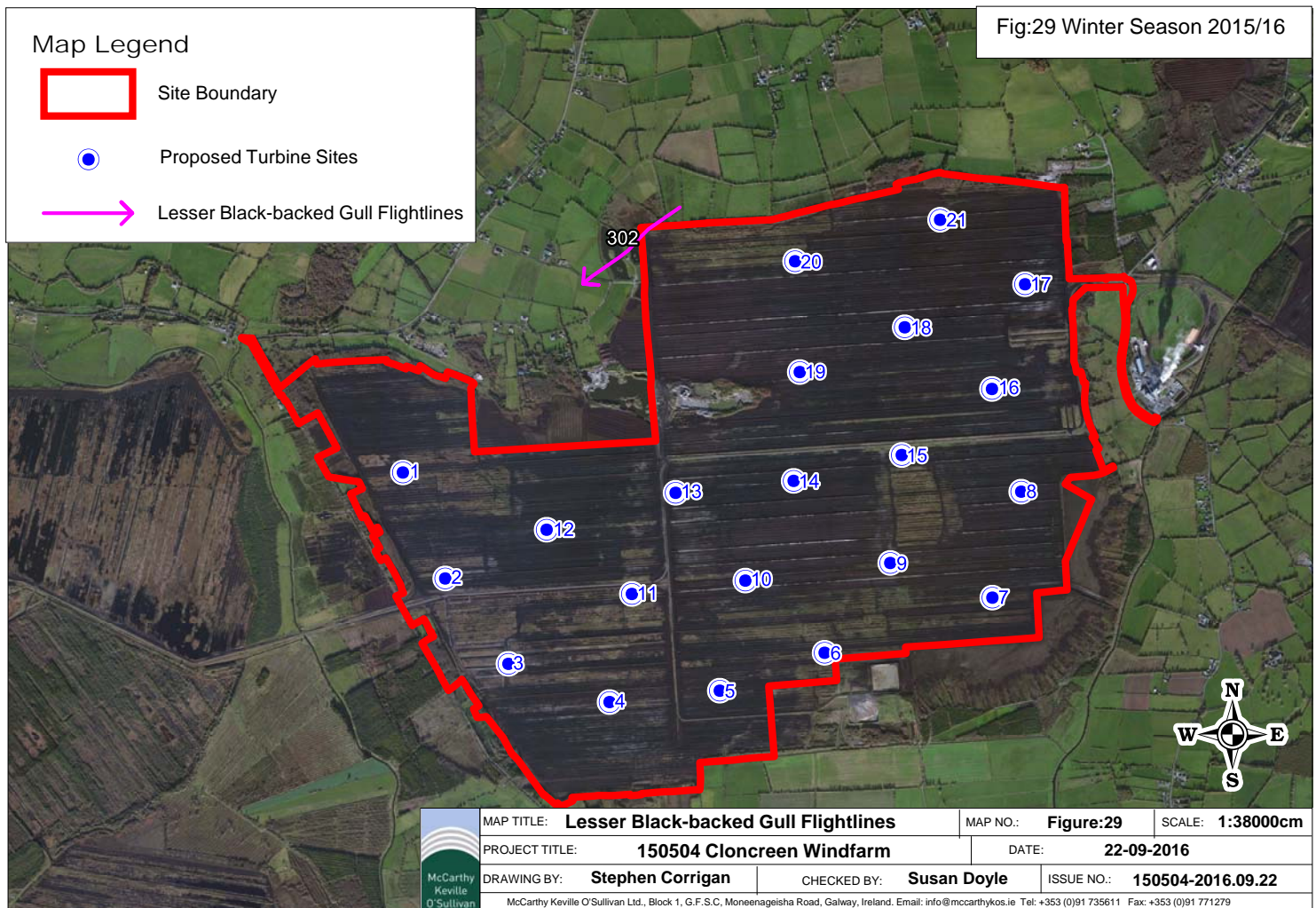
-  Site Boundary
-  Proposed Turbine Sites
-  Lesser Black-backed Gull Flightlines

Fig:29 Winter Season 2015/16



## Map Legend

- Site Boundary
- Proposed Turbine Sites
- Kestrel Flightlines

Fig:30 Winter Season 2015/16

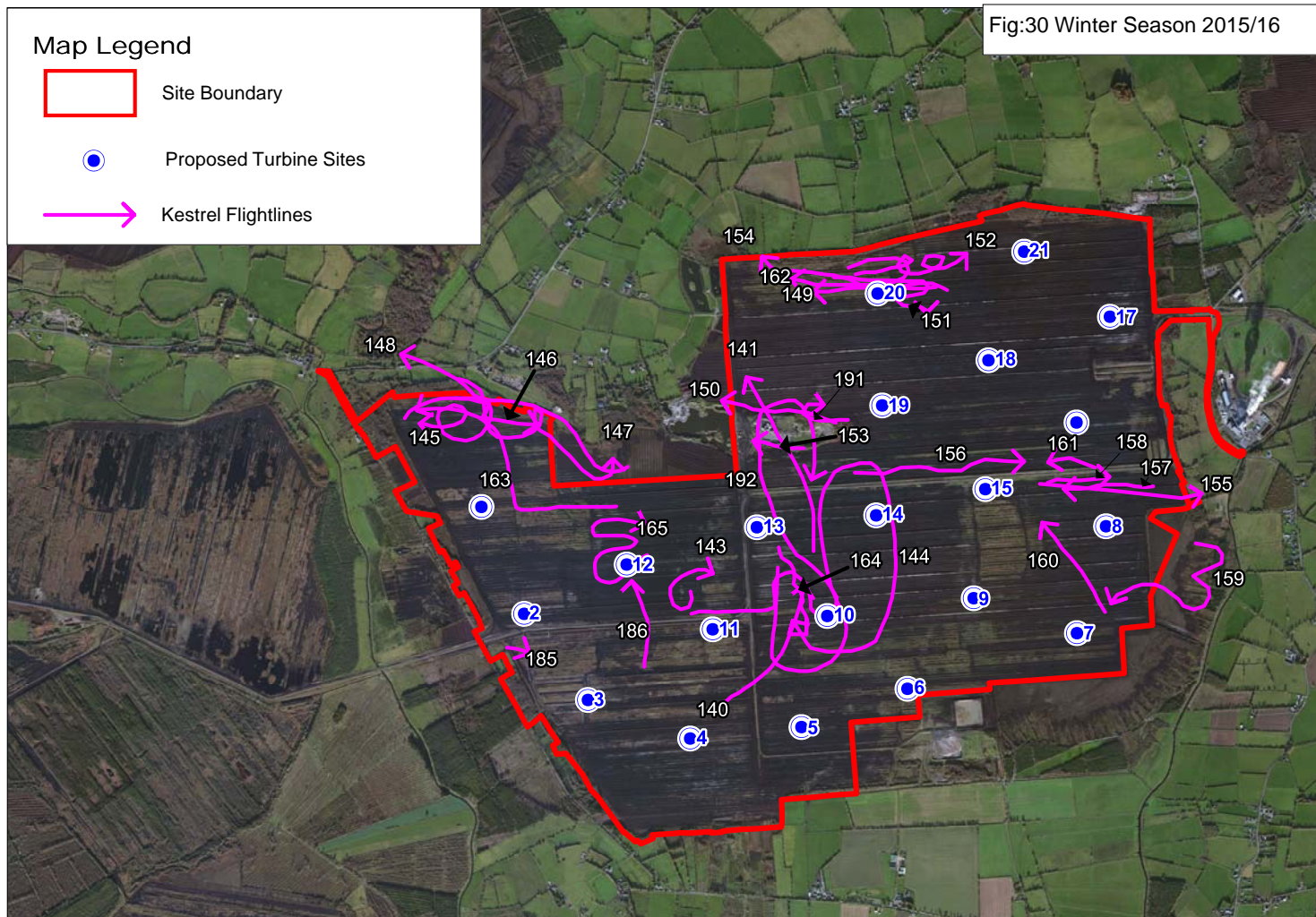
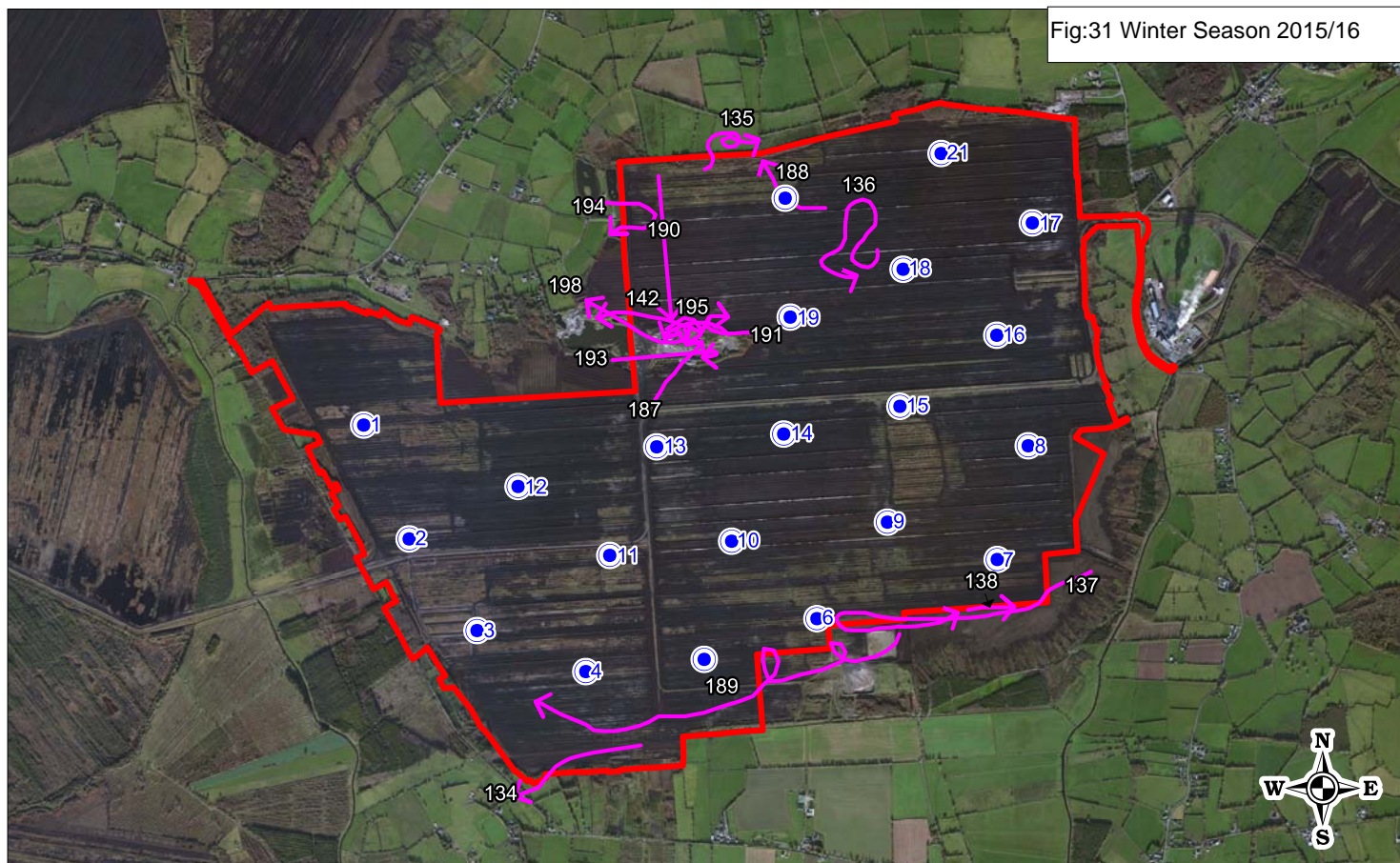
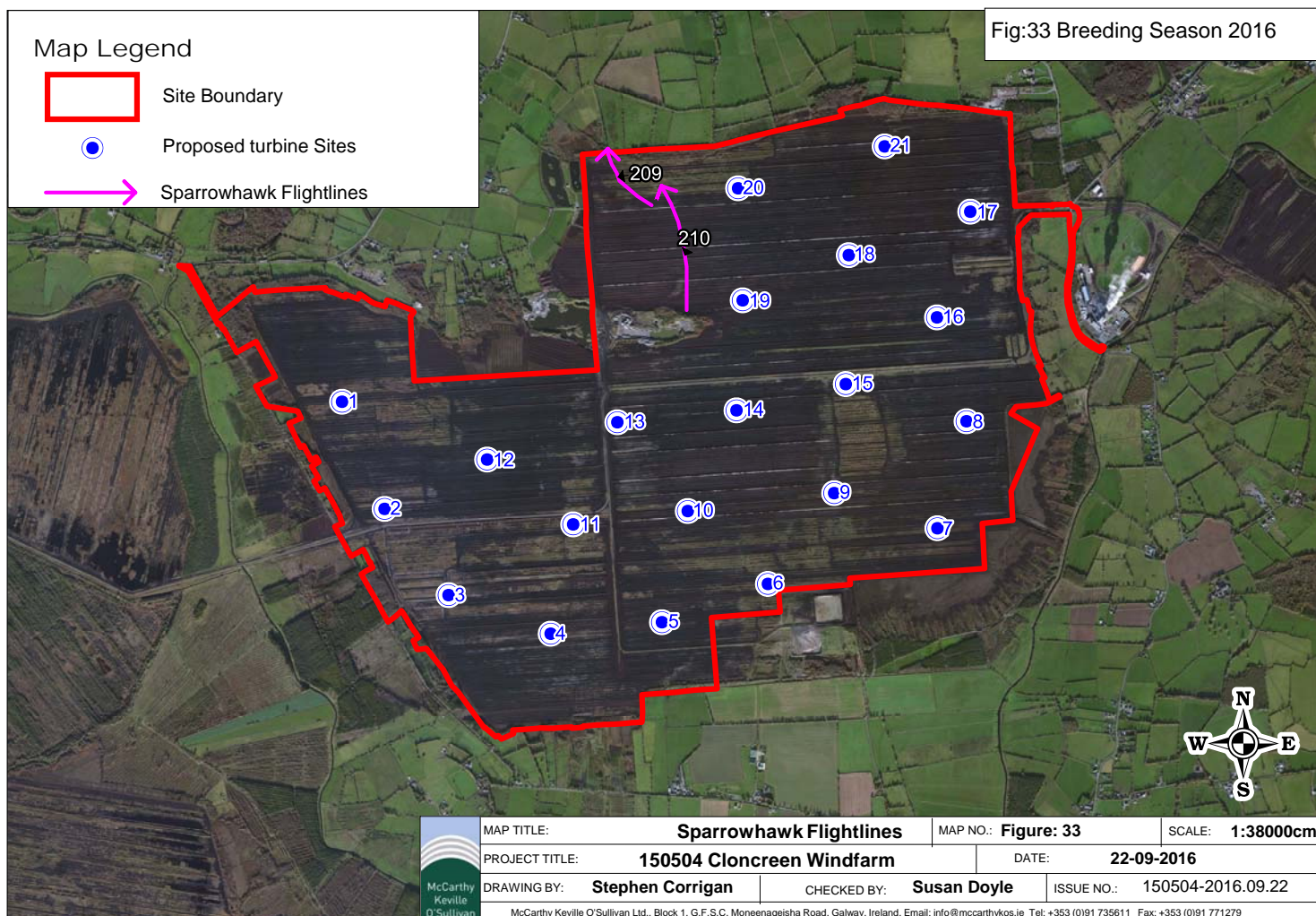
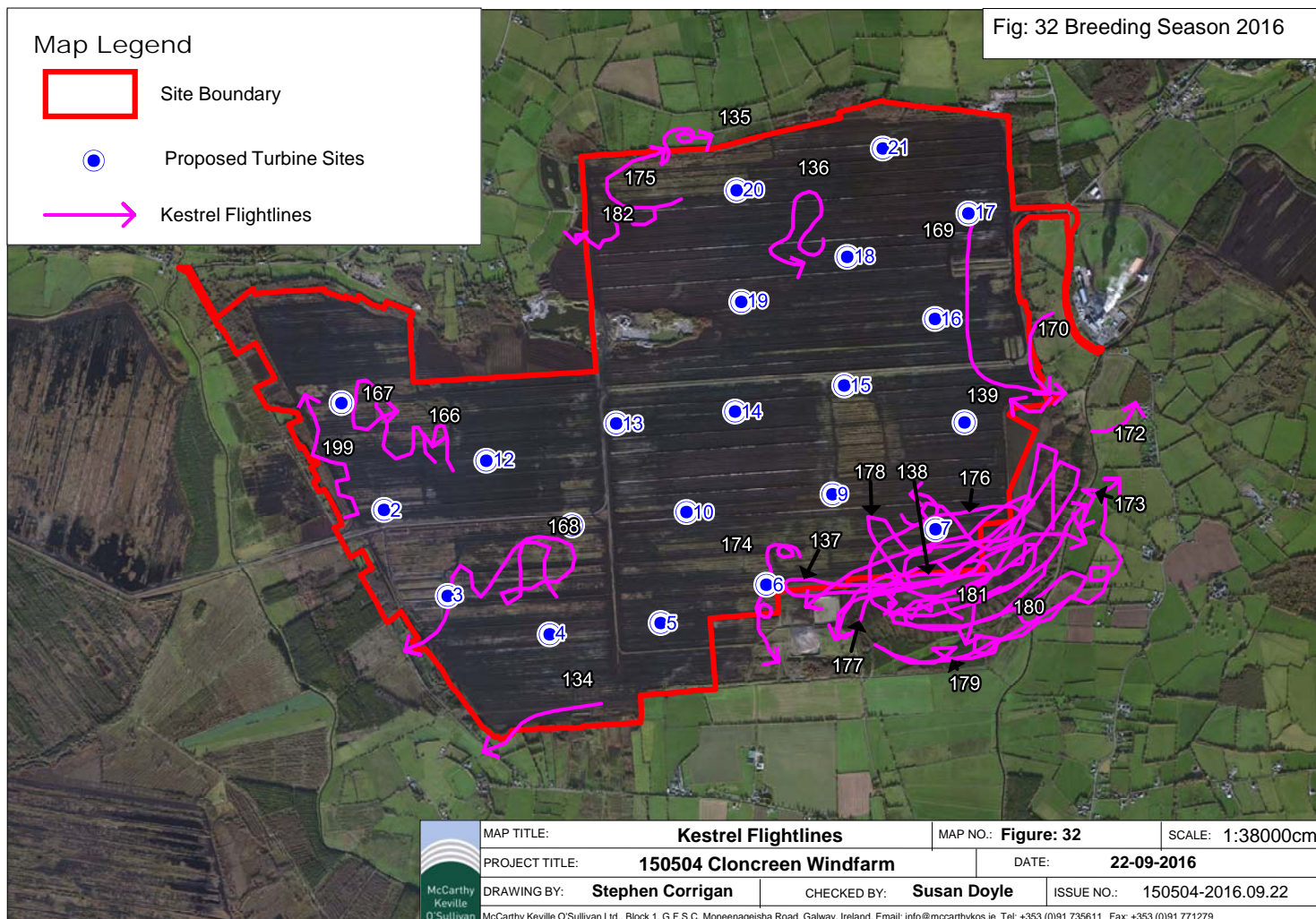


Fig:31 Winter Season 2015/16



 McCarthy Keville O'Sullivan	MAP TITLE: <b>Kestrel Flightlines</b>		MAP NO.: <b>Figure: 30 &amp; 31</b>	SCALE: <b>1:38000cm</b>
	PROJECT TITLE: <b>150504 Cloncreen Windfarm</b>		DATE: <b>22-09-2016</b>	
	DRAWING BY: <b>Stephen Corrigan</b>	CHECKED BY: <b>Susan Doyle</b>	ISSUE NO.: <b>150504-2016.09.22</b>	
	McCarthy Keville O'Sullivan Ltd., Block 1, G.F.S.C. Moneenageisha Road, Galway, Ireland. Email: info@mccarthykos.ie Tel: +353 (0)91 735611 Fax: +353 (0)91 771279			



## Map Legend

- Site Boundary
- Proposed Turbine Sites
- Buzzard Flightlines

Fig:34 Winter Season 2015/16

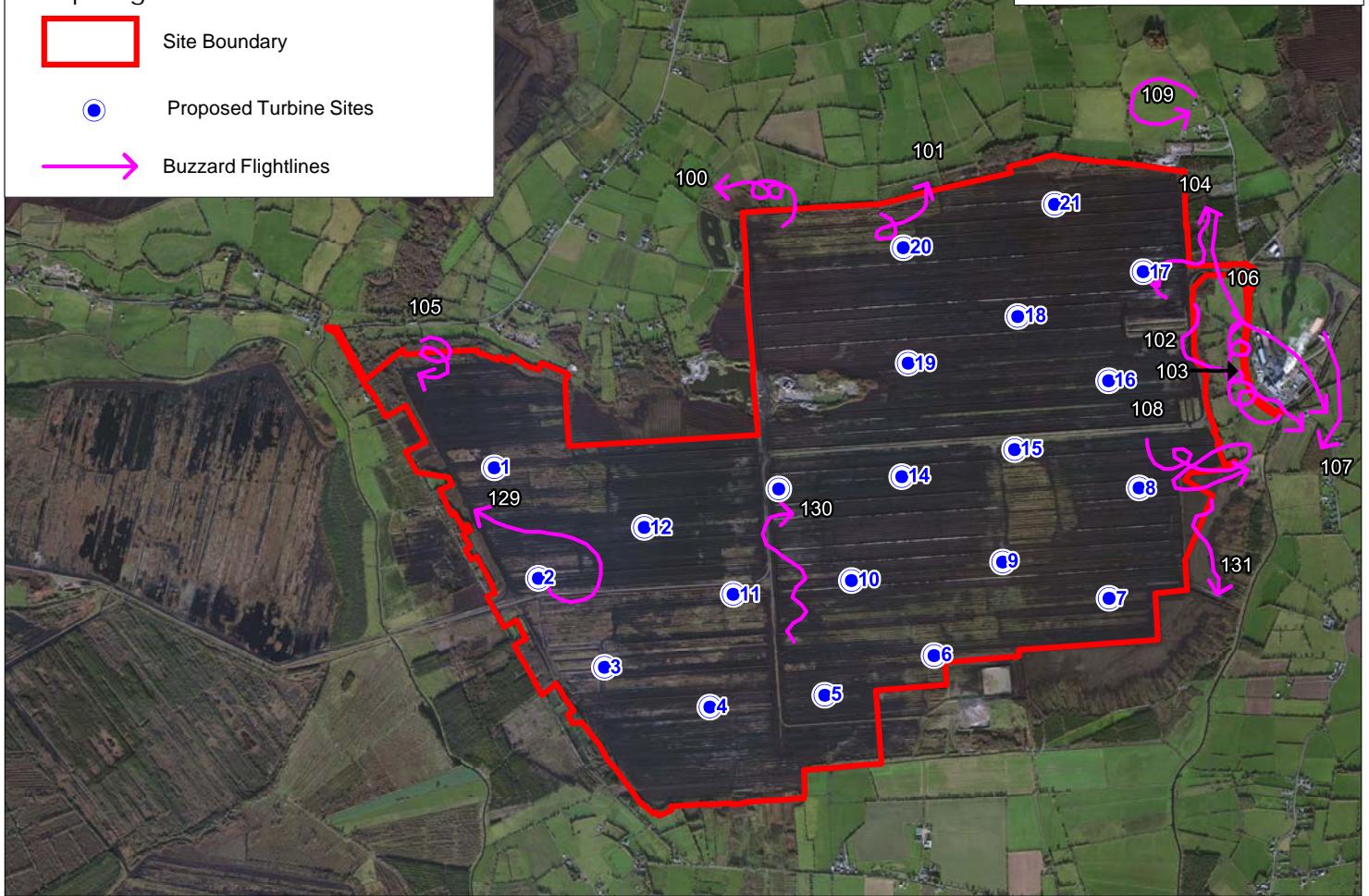
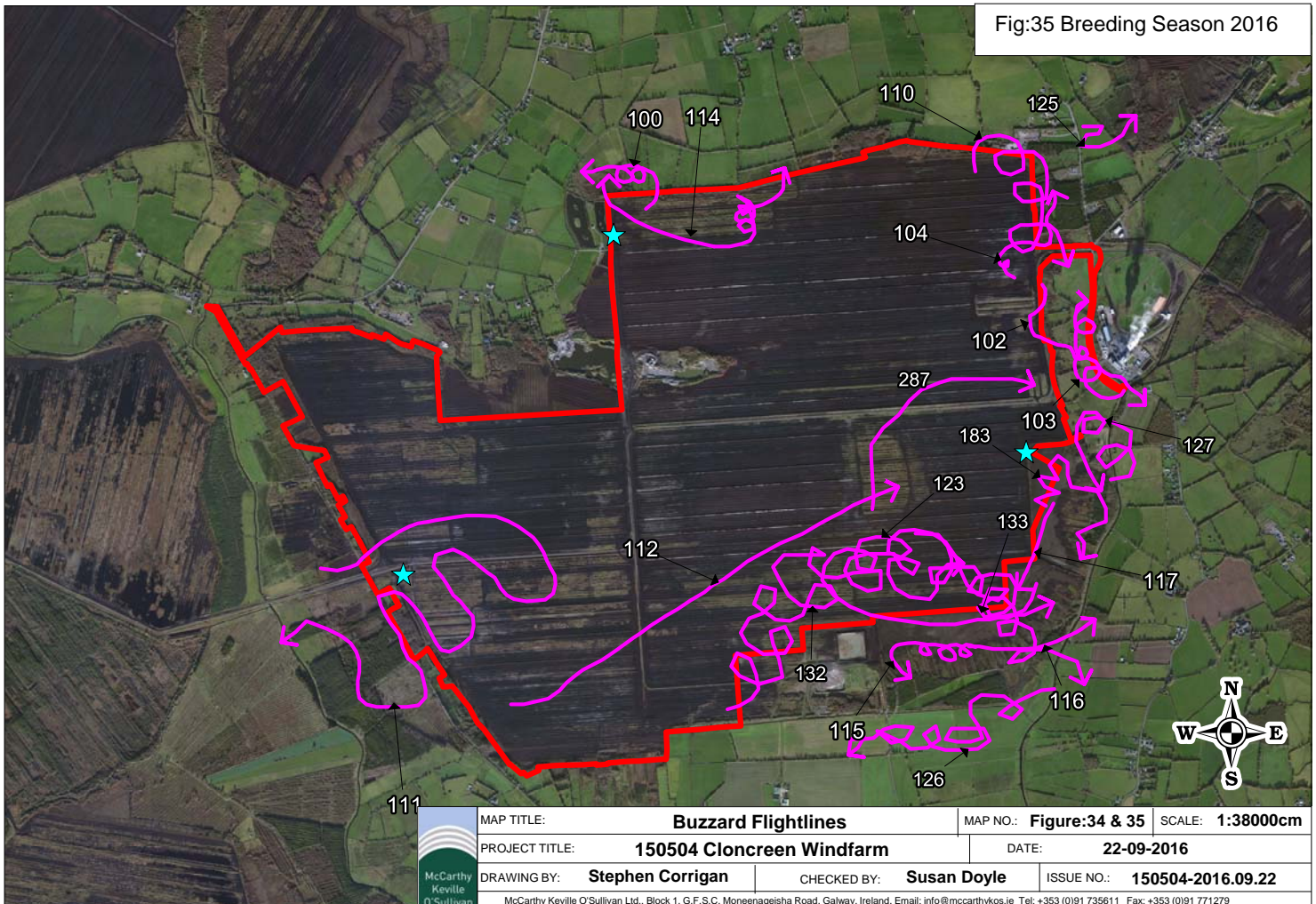


Fig:35 Breeding Season 2016



MAP TITLE:

**Buzzard Flightlines**

PROJECT TITLE:

**150504 Cloncreen Windfarm**

DRAWING BY:

**Stephen Corrigan**

CHECKED BY:

**Susan Doyle**

MAP NO.:

**Figure:34 & 35**

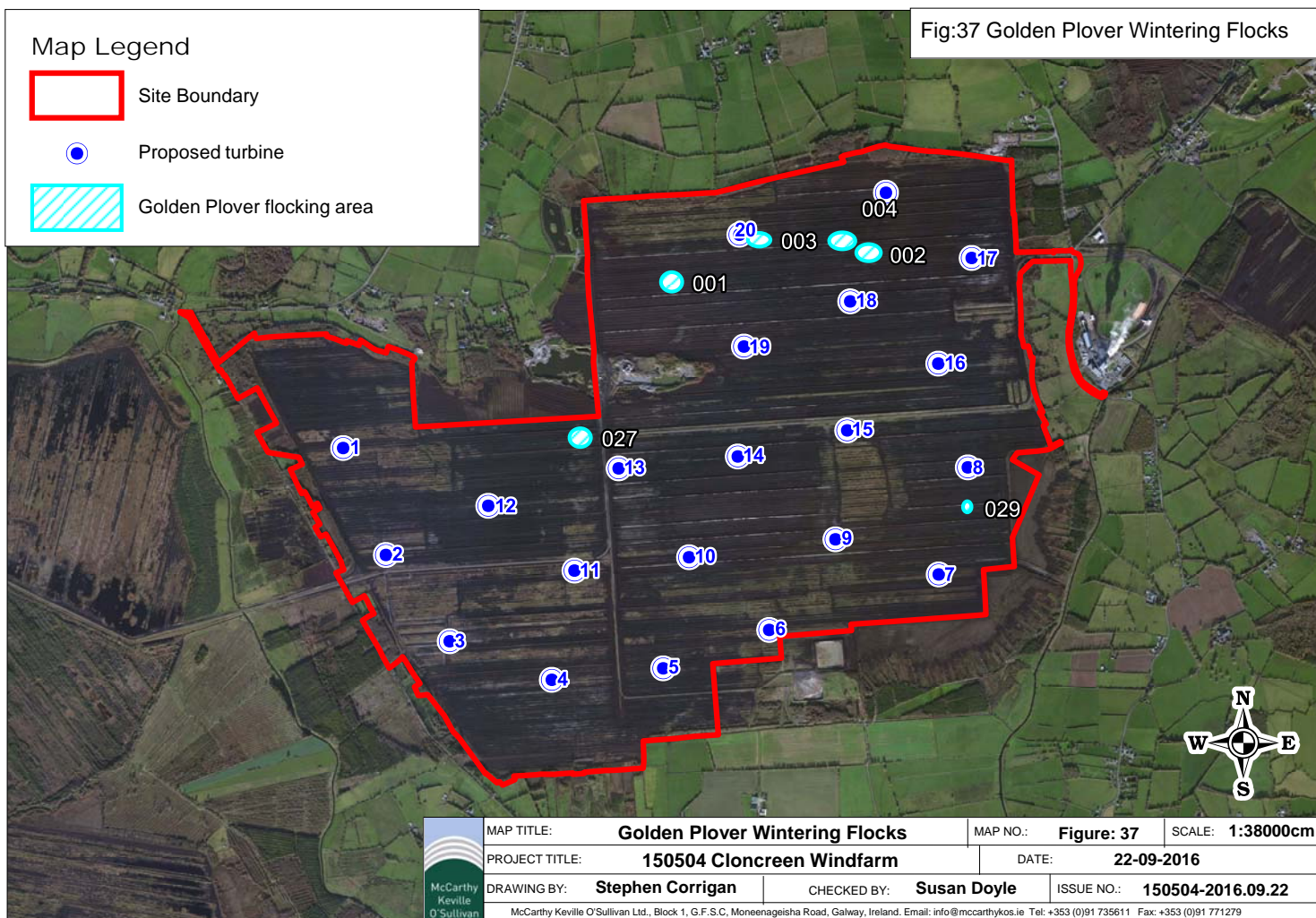
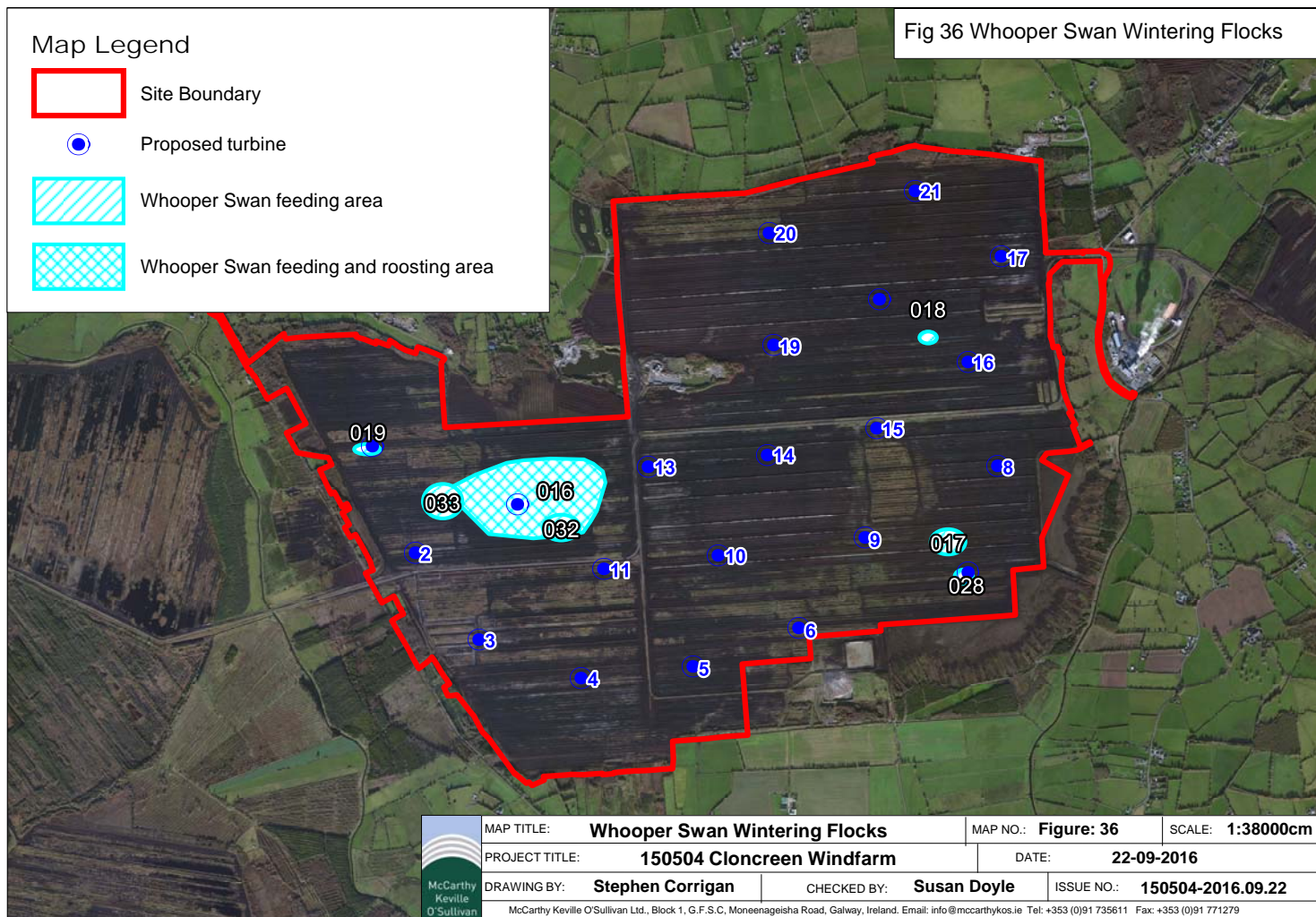
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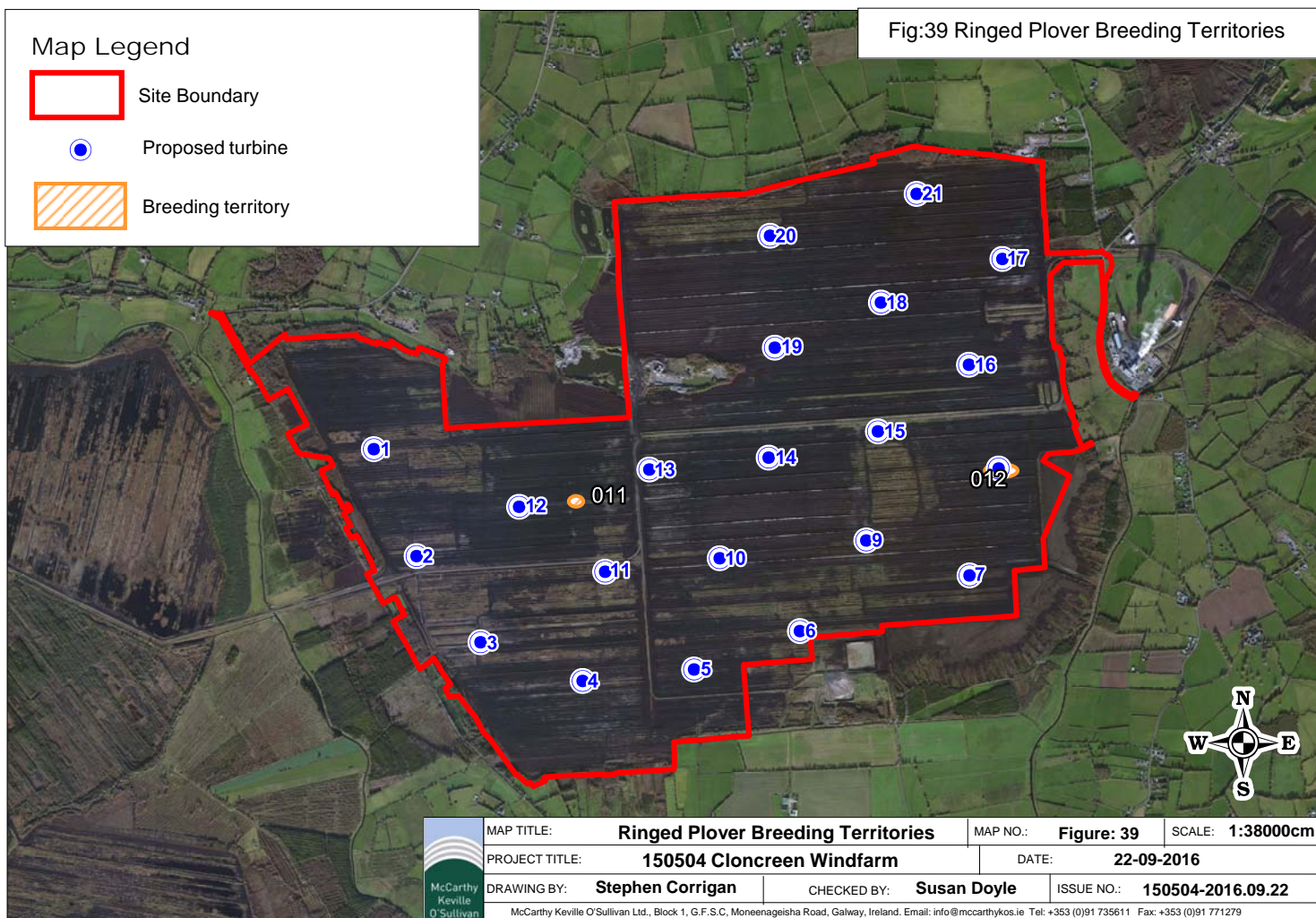
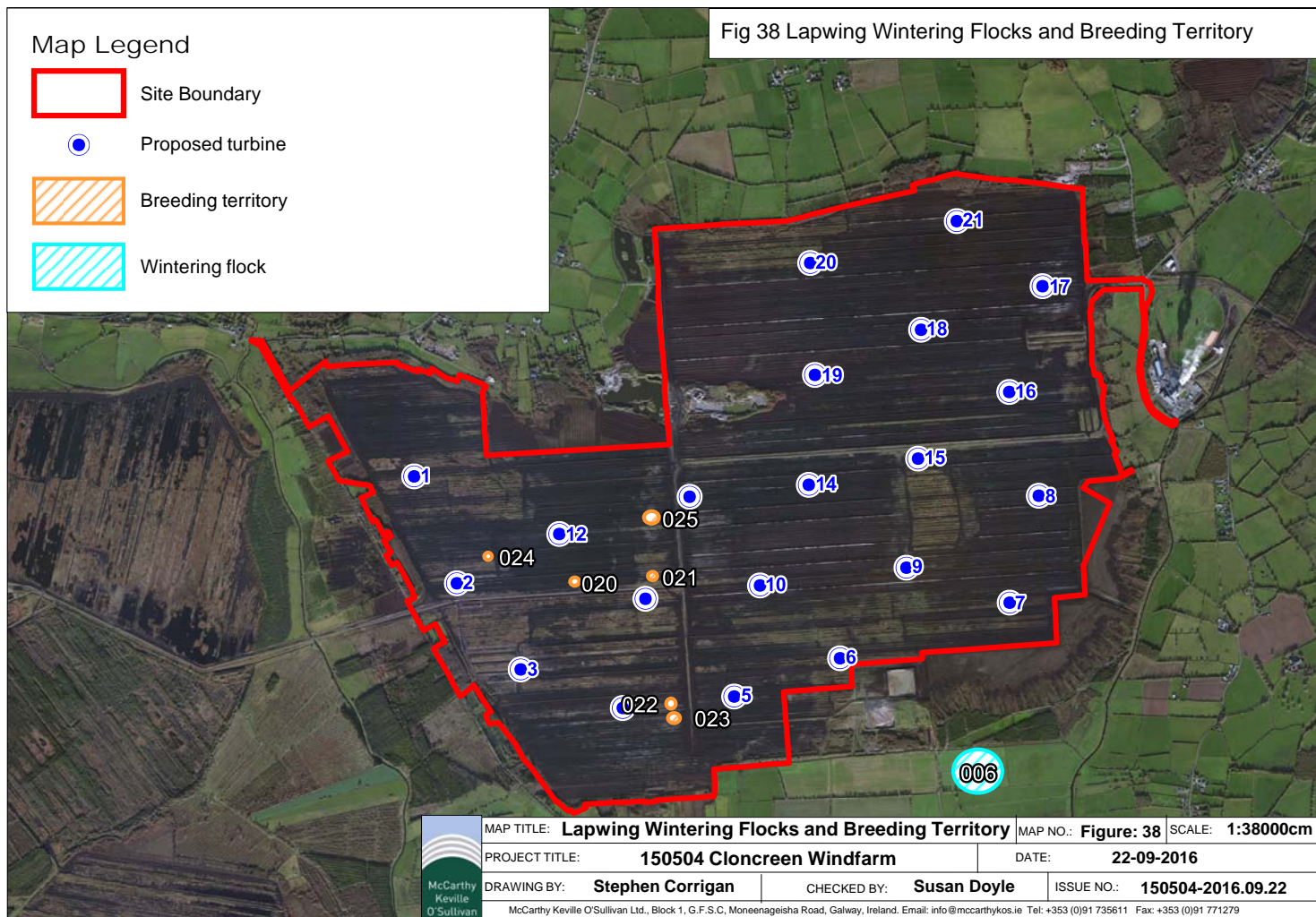
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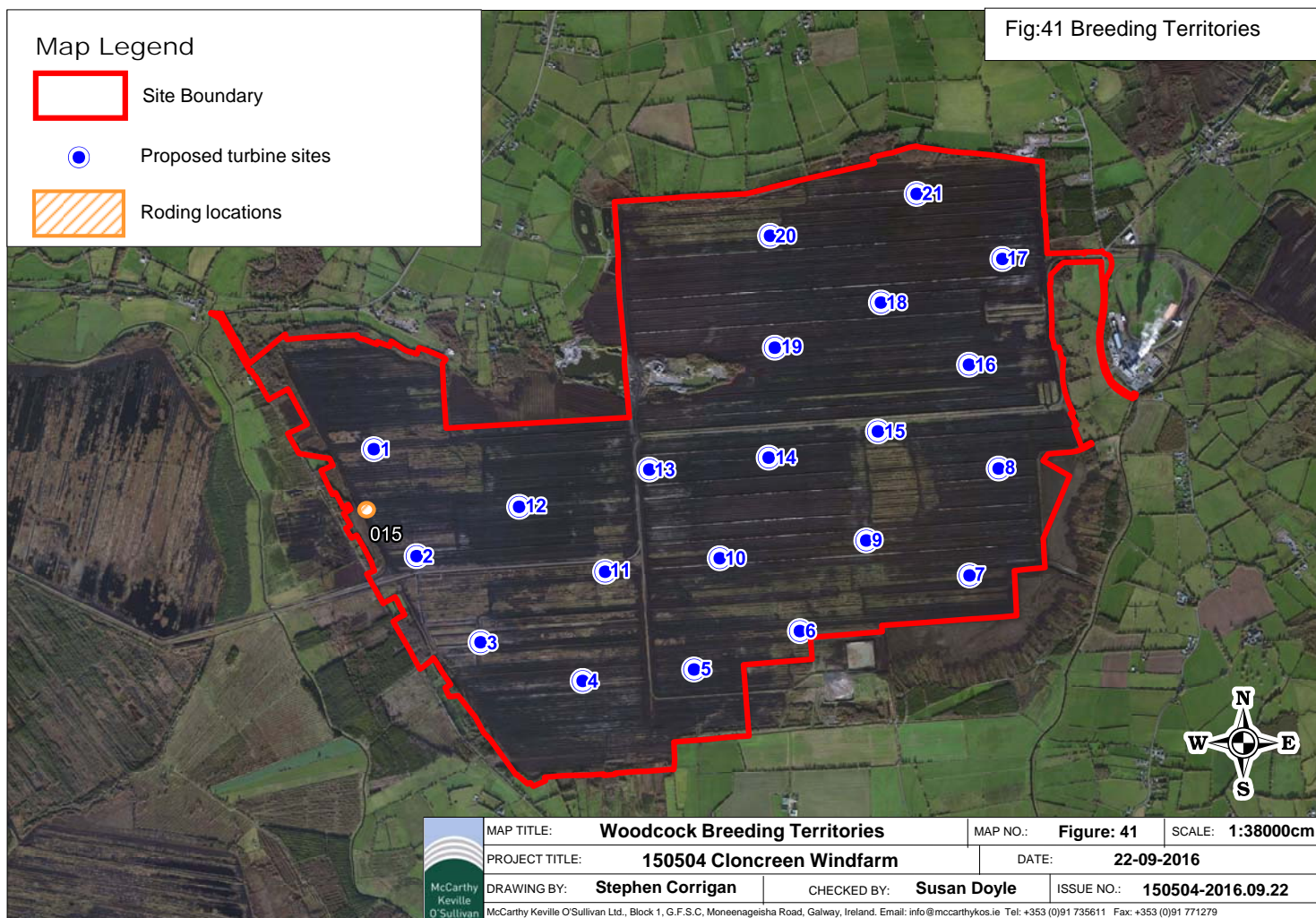
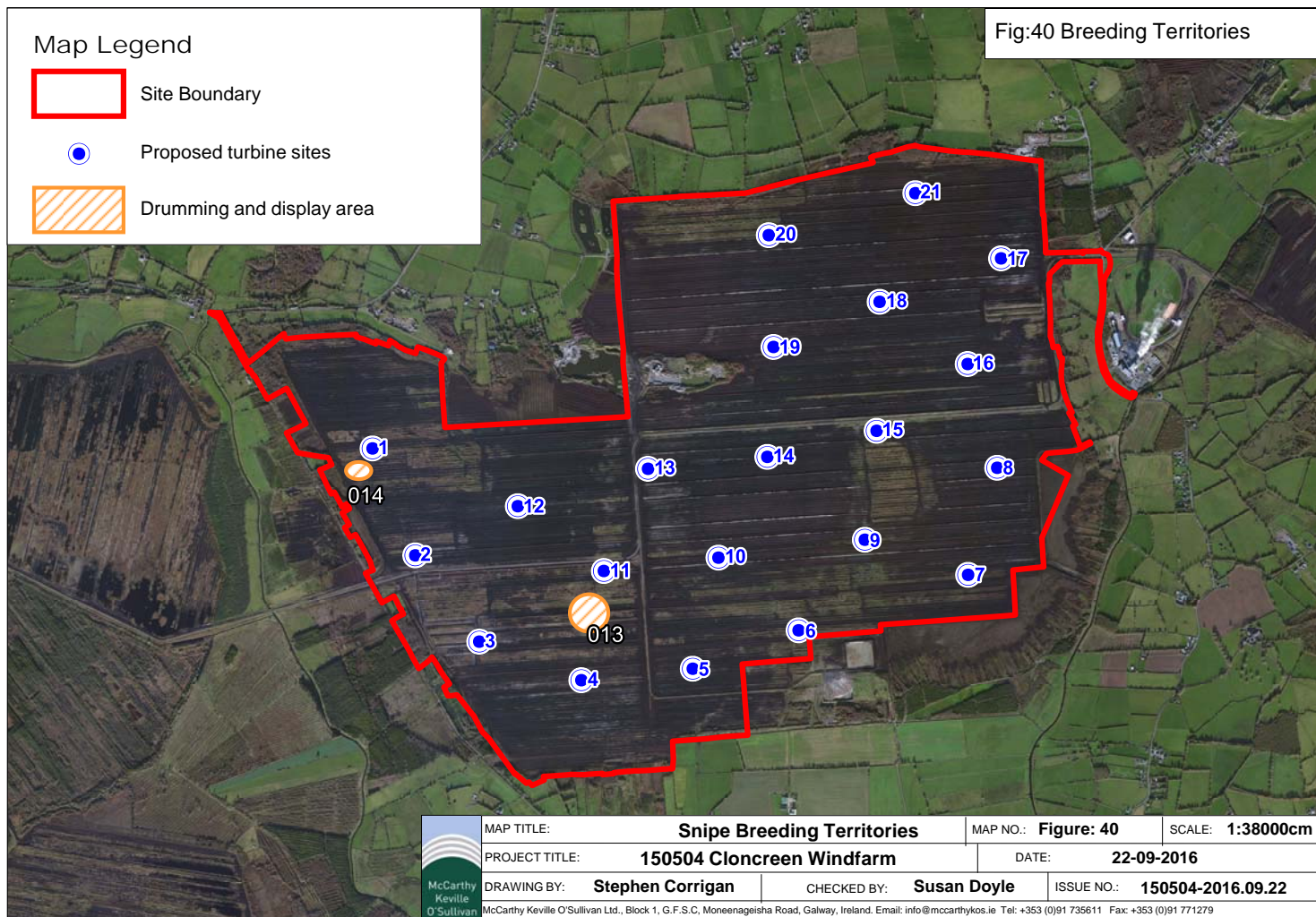
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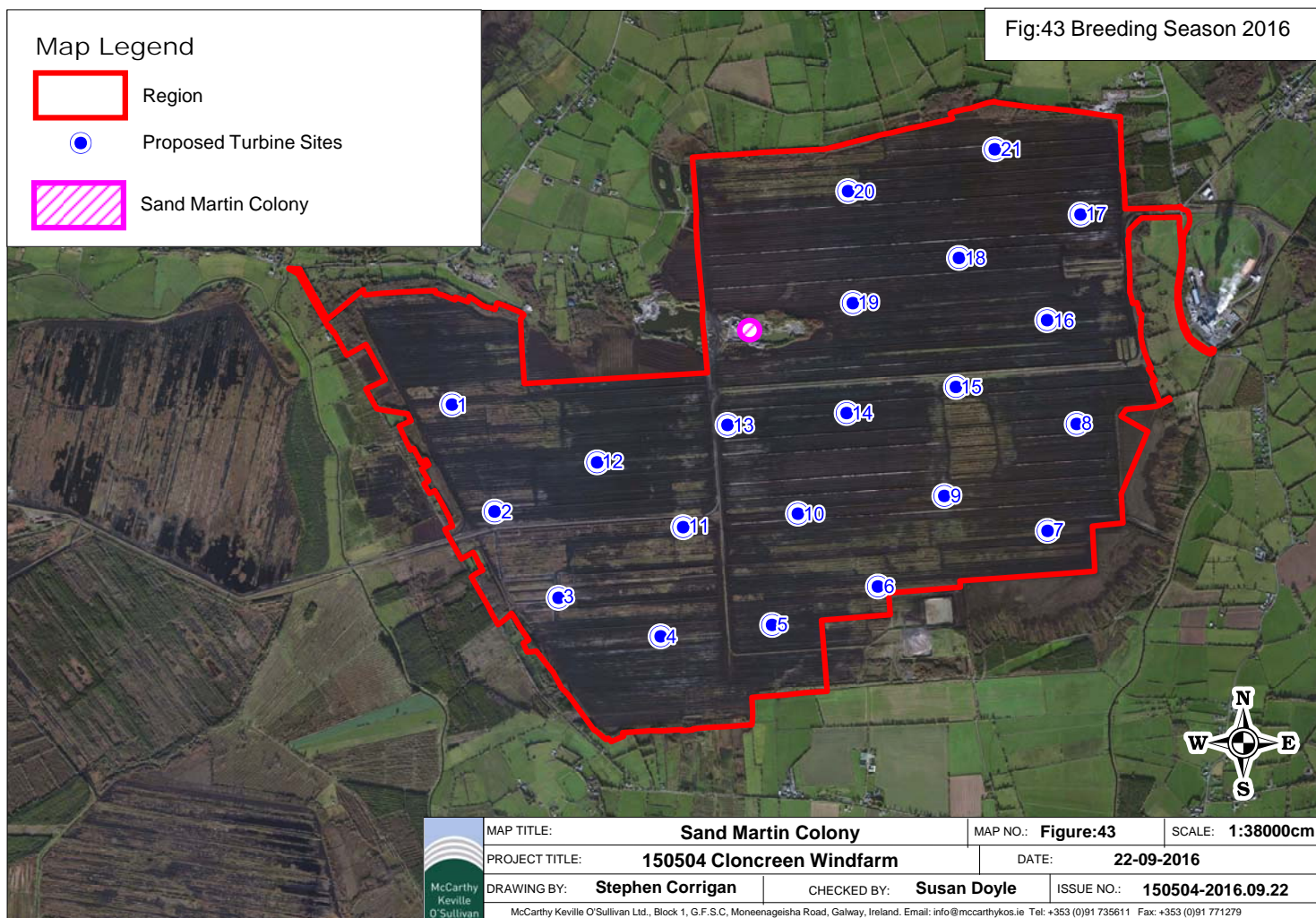
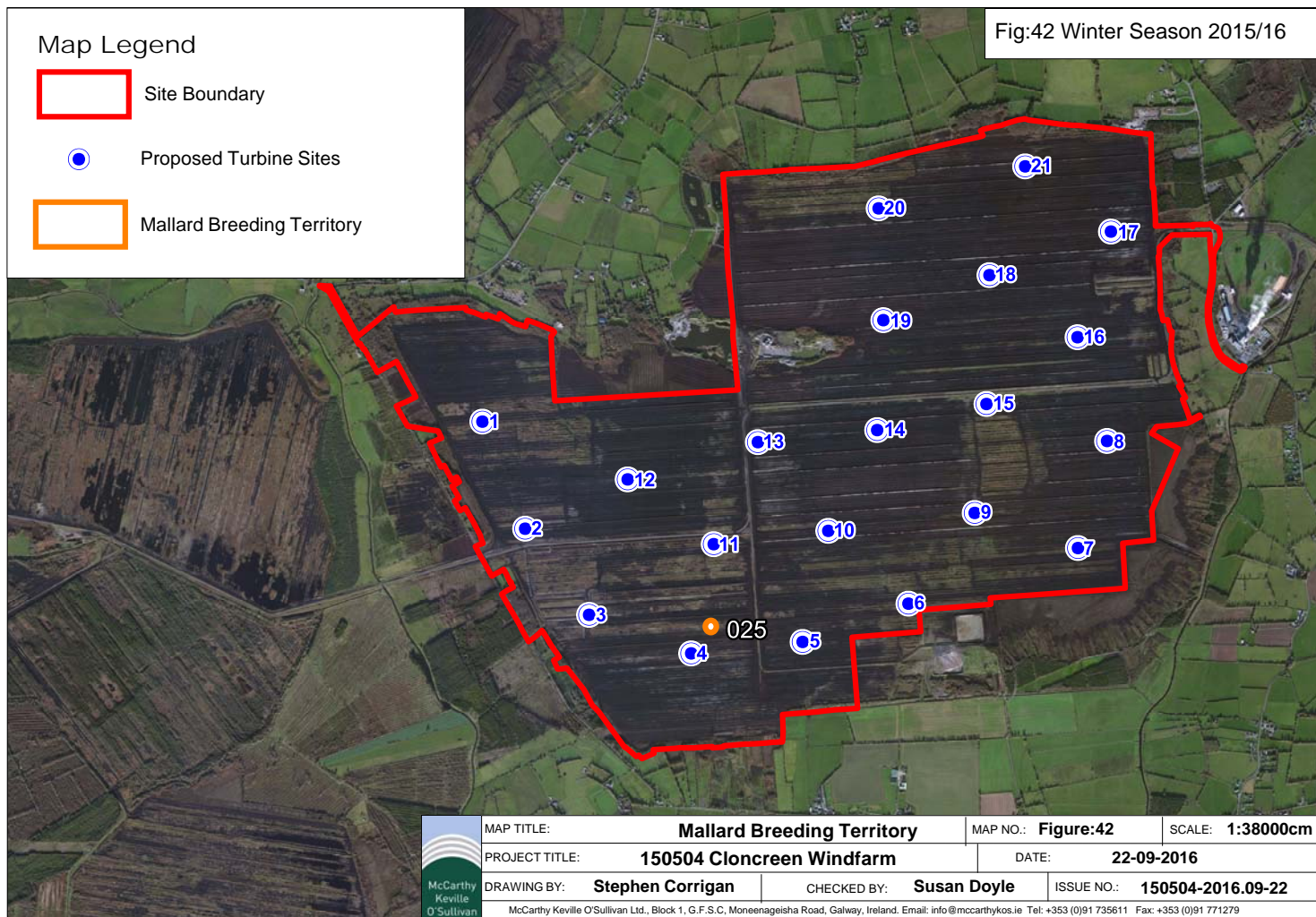
**150504-2016.09.22**

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**Table 3 transect survey records – winter 2013/14 & 2015/16**

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Non-breeding	11/11/2013		1		Common Blackbird	3	
Non-breeding	11/11/2013		2		Common Blackbird	1	
Non-breeding	11/11/2013		4		Common Blackbird	1	
Non-breeding	11/11/2013		5		Common Blackbird	3	
Non-breeding	10/01/2014		1		Common Blackbird	2	
Non-breeding	10/01/2014		2		Common Blackbird	3	
Non-breeding	10/01/2014		4		Common Blackbird	2	
Non-breeding	10/01/2014		5		Common Blackbird	1	
Non-breeding	26/02/2014		1		Common Blackbird	1	
Non-breeding	26/02/2014		2		Common Blackbird	1	
Non-breeding	26/02/2014		4		Common Blackbird	3	
Both (overlap)	25/03/2015		1		Common Blackbird	4	
Both (overlap)	25/03/2015		2		Common Blackbird	6	
Both (overlap)	25/03/2015		3		Common Blackbird	2	
Both (overlap)	25/03/2015		4		Common Blackbird	4	
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	08:13	Common Blackbird	1	WL2 (treeline); calling in trees. 18m from transect line
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	08:37	Common Blackbird	1	WL2 (treeline); singing. 10m from transect line
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	09:16	Common Blackbird	1	WS2 (mature birch willow scrub); alarm calling from young trees. 10m from transect line
Non-Breeding	17/12/2015	1hr 15mins starting at 15:00	1	15:05	Common Blackbird	1	PB1 (remnant high bog); in heather. 4m from transect line

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Non-Breeding	17/12/2015	1hr 15mins starting at 15:00	1	15:28	Common Blackbird	1	WS1 (scrub); in trees around gravel pit. 10m from transect line
Non-Breeding	24/02/2016	1hr 15mins starting at 09:45	1	09:48	Common Blackbird	1	PB1 (remnant high bog); calling from heather. 50m from transect line
Non-Breeding	24/02/2016	1hr 15mins starting at 09:45	1	10:04	Common Blackbird	1	WS1 (scrub); alarm calls and flies over gravel pit. 50m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	10:45	Common Blackbird	1	WS2 (birch willow woodland); flying over. 0m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	11:33	Common Blackbird	1	WS2 (birch scrub woodland); alarm calling. 0-25m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	11:43	Common Blackbird	1	PB4 (bare peat with recolonising dry bog plant communities); flying over. 25-100m from transect line
Both (Overlap)	31/03/2016	1hrs starting at 07:20	1	12:26	Common Blackbird	2	WN7 (bog woodland): observed in woodland edge. 0-25m from transect
Non-breeding	11/11/2013		2		Bullfinch	2	
Non-breeding	10/01/2014		3		Bullfinch	1	
Non-breeding	26/02/2014		1		Bullfinch	1	
Non-breeding	26/02/2014		3		Bullfinch	2	
Non-breeding	11/11/2013		1		Blue tit	2	
Non-breeding	11/11/2013		4		Blue tit	4	
Non-breeding	10/01/2014		2		Blue tit	4	
Non-breeding	26/02/2014		1		Blue tit	2	
Non-breeding	26/02/2014		3		Blue tit	1	
Non-breeding	26/02/2014		4		Blue tit	2	
Both (overlap)	25/03/2015		2		Blue tit	2	
Both (overlap)	25/03/2015		3		Blue tit	2	

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Both (overlap)	25/03/2015		4		Blue tit	4	
Both (Overlap)	31/03/2016			12:26	Blue Tit	1	WD4 (conifer plantation); WD2 (birch woodland): calls and alarming from vegetation. 0-25m from transect
<b>Non-breeding</b>	<b>11/11/2013</b>		<b>4</b>		<b>Common Buzzard</b>	<b>2</b>	
<b>Non-breeding</b>	<b>11/11/2013</b>		<b>5</b>		<b>Common Buzzard</b>	<b>1</b>	
<b>Non-breeding</b>	<b>10/01/2014</b>		<b>3</b>		<b>Common Buzzard</b>	<b>2</b>	
<b>Non-breeding</b>	<b>10/01/2014</b>		<b>4</b>		<b>Common Buzzard</b>	<b>1</b>	
<b>Non-breeding</b>	<b>26/02/2014</b>		<b>1</b>		<b>Common Buzzard</b>	<b>1</b>	
<b>Non-breeding</b>	<b>26/02/2014</b>		<b>2</b>		<b>Common Buzzard</b>	<b>2</b>	
Both (Overlap)	31/03/2016	1hrs starting at 07:20	1	11:14	Common Chiffchaff	1	WN7 (bog woodland): singing in trees. 0-25m from transect
Both (Overlap)	31/03/2016	2hrs starting at 10:50	3	12:34	Common Chiffchaff	1	WN7 (bog woodland): singing in trees. 0-25m from transect
Non-breeding	11/11/2013		1		Chaffinch	2	
Non-breeding	11/11/2013		2		Chaffinch	6	
Non-breeding	11/11/2013		3		Chaffinch	2	
Non-breeding	11/11/2013		5		Chaffinch	1	
Non-breeding	10/01/2014		1		Chaffinch	3	
Non-breeding	10/01/2014		2		Chaffinch	4	
Non-breeding	10/01/2014		4		Chaffinch	3	
Non-breeding	26/02/2014		1		Chaffinch	3	
Non-breeding	26/02/2014		2		Chaffinch	1	
Non-breeding	26/02/2014		3		Chaffinch	2	
Non-breeding	26/02/2014		5		Chaffinch	2	
Non-Breeding	17/12/2015	1hr 15mins starting at 15:00	1	15:14	Chaffinch	3	WL2 (treeline); in trees next to quarry. 5m from transect line

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Non-Breeding	24/02/2016	1hr 15mins starting at 09:45	1	09:48	Chaffinch	1	PB1 (remnant high bog); calling from heather. 50m from transect line
Non-Breeding	24/02/2016	1hr 15mins starting at 09:45	1	09:59	Chaffinch	1	ED2&FL8 (disused quarry flooded with water); singing in quarry. 30m from transect line
Non-Breeding	24/02/2016	1hr 15mins starting at 09:45	1	10:15	Chaffinch	1	WS1 (scrub); singing in trees around gravel pit. 7m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	10:31	Chaffinch	1	WS2 (birch willow scrub); singing. 0-25m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	10:32	Chaffinch	1	WS2 (birch willow woodland); calling. 25-100m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	10:41	Chaffinch	1	WS2 (willow scrub woodland); singing. 0-25m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	10:42	Chaffinch	1	WS2 (birch willow woodland); singing. 0-25m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	11:29	Chaffinch	1	WS2 (birch scrub woodland); singing. 25-100m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	11:38	Chaffinch	1	WS2 (birch scrub woodland); calling. 0-25m from transect line
Both (Overlap)	31/03/2016	1hr 55mins starting at 07:45	4	09:05	Chaffinch	4	WS2 (birch woodland): calls and perched singing in trees. 0-25m from transect
Both (Overlap)	31/03/2016			10:10	Chaffinch	3	WS1 (birch scrub with pioneer fen mosaic): calls and song in trees. 0-25m from transect
Both (Overlap)	31/03/2016			10:25	Chaffinch	3	WS1 (birch scrub): singing and calling in trees. 25-100m from transect

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Both (Overlap)	31/03/2016			10:35	Chaffinch	2	WS2 (mature birch willow scrub): singing and calling in trees. 0-25m from transect
Both (Overlap)	31/03/2016			11:14	Chaffinch	1	WN7 (bog woodland): singing in trees. 25-100m from transect
Both (Overlap)	31/03/2016			11:40	Chaffinch	2	WN7 (bog woodland): two males singing within an area of woodland. 0-25m from transect
Both (Overlap)	31/03/2016			11:47	Chaffinch	2	PB1 (remnant high bog): singing over heather. 0-25m from transect
Both (Overlap)	31/03/2016			12:09	Chaffinch	4	WN7 (bog woodland): visual of two pairs within bog woodland. 0-25m from transect
Non-breeding	11/11/2013		1		Coal tit	2	
Non-breeding	10/01/2014		2		Coal tit	3	
Non-breeding	26/02/2014		1		Coal tit	4	
Both (overlap)	25/03/2015				Coal tit	4	
Both (overlap)	25/03/2015				Coal tit	1	
Both (overlap)	25/03/2015				Coal tit	2	
Both (Overlap)	31/03/2016			10:58	Coal Tit	1	WS1 (birch scrub): foraging and calling on birch trees in scrub. 0-25m from transect
Both (Overlap)	31/03/2016	1hrs starting at 07:20	1	12:09	Coal Tit	2	WN7 (bog woodland): visual of pair foraging within trees. 0-25m from transect
Non-breeding	11/11/2013		1		Dunnock	1	
Non-breeding	11/11/2013		5		Dunnock	1	
Non-breeding	10/01/2014		4		Dunnock	1	
Non-breeding	26/02/2014		2		Dunnock	1	
Both (overlap)	25/03/2015		3		Dunnock	2	
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	10:45	Dunnock	1	WS2 (birch willow woodland); singing. 0-25m from transect line

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Both (Overlap)	31/03/2016	3hrs 25mins starting at 09:40	5	09:05	Dunnock	1	WS2 (birch woodland): singing in trees. 0-25m from transect
Both (Overlap)	31/03/2016			10:58	Dunnock	1	WS1 (birch scrub): singing in scrub vegetation. 0-25m from transect
Both (Overlap)	31/03/2016			11:14	Dunnock	1	WN7 (bog woodland): singing in trees. 25-100m from transect
Both (Overlap)	31/03/2016	2hrs starting at 08:40	2	11:57	Dunnock	1	WL2 (treeline): singing in trees. 0-25m from transect
Non-breeding	10/01/2014		1		Fieldfare	6	
Non-breeding	10/01/2014		1		European Robin	1	
Non-breeding	11/11/2013		3		Goldcrest	1	
Non-breeding	26/02/2014		1		Goldcrest	1	
Non-breeding	26/02/2014		2		Goldcrest	1	
Both (overlap)	25/03/2015				Goldcrest	2	
Both (overlap)	25/03/2015				Goldcrest	1	
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	08:16	Goldcrest	1	WL2 (treeline); calling from boundary treeline. 6m from transect line
Non-Breeding	01/12/2015	1hr 45mins starting at 15:00	1	15:27	Goldcrest	1	WL2 (treeline); calling from marginal vegetation in treeline. 5m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	10:09	Goldcrest	1	WL2 (treeline); singing. 0-25m from transect line
Non-breeding	11/11/2013		1		European Goldfinch	4	
Non-breeding	26/02/2014		1		European Goldfinch	5	
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	09:07	European Goldfinch	2	PB1 (remnant high bog); fly over heather. 4m from transect line
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	09:10	European Goldfinch	1	PB4 (bare peat with pioneer poor fen); in reeds within flooded peat. 1m from transect line

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	08:26	European Golden Plover		audible calling
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	08:45	European Golden Plover	3	PB4 (bare peat); flushed by observer. 12m from transect line. See Map Ref. 029
Non-Breeding	26/11/2015	1hr 50mins starting at 14:50	2	15:47	European Golden Plover	100	offsite - flock flying to W of study area
Non-Breeding	01/12/2015	1hr 45mins starting at 15:00	1	15:52	European Golden Plover	3	PB4 (bare peat); flushed by observer. 20m from transect line. See Map Ref. 027
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	10:09	European Golden Plover	3	PB4 (bare peat); flying S over study area calling approximately 1-2m high. 25-100m from transect line
Both (Overlap)	31/03/2016			11:14	European Greenfinch	1	PB1 (remnant high bog): flies over heather. 0-25m from transect
Non-breeding	11/11/2013		4		Great tit	2	
Non-breeding	10/01/2014		1		Great tit	1	
Non-breeding	10/01/2014		4		Great tit	1	
Non-breeding	26/02/2014		1		Great tit	1	
Non-breeding	26/02/2014		2		Great tit	2	
Non-breeding	26/02/2014		4		Great tit	1	
Both (overlap)	25/03/2015				Great Tit	1	
Both (overlap)	25/03/2015		2		Great Tit	1	
Both (Overlap)	31/03/2016	2hrs starting at 10:50	3	10:58	Great Tit	1	WS2 (mature birch willow scrub): singing in trees. 25-100m from transect
Non-breeding	11/11/2013		1		Grey heron	3	
Non-breeding	11/11/2013		2		Grey heron	1	
Non-breeding	10/01/2014		1		Grey heron	2	
Non-breeding	10/01/2014		2		Grey heron	2	
Non-breeding	10/01/2014		3		Grey heron	1	

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Non-breeding	26/02/2014		1		Grey heron	1	
Non-breeding	26/02/2014		2		Grey heron	1	
Both (overlap)	25/03/2015				Grey Heron	1	
Both (overlap)	25/03/2015		1		Grey Heron	1	
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	09:46	Grey Heron	1	moving around study area foraging - 10m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	10:04	Grey Heron	1	PB4 (bare peat with pioneer poor fen); foraging. 60m from transect line
Non-Breeding	01/12/2015	1hr 45mins starting at 15:00	1	15:15	Grey Heron	1	PB4 (bare peat with temporary standing water); flies in and lands next to standing water. 200m from transect line
Non-Breeding	01/12/2015	1hr 45mins starting at 15:00	1	15:20	Grey Heron	1	PB4 (bare peat with pioneer dry grassland); flying over. 150m from transect line
Non-breeding	11/11/2013		1		Hooded Crow	2	
Non-breeding	11/11/2013		5		Hooded Crow	3	
Non-breeding	10/01/2014		1		Hooded Crow	4	
Non-breeding	10/01/2014		2		Hooded Crow	1	
Non-breeding	26/02/2014		1		Hooded Crow	3	
Both (overlap)	25/03/2015		2		Hooded Crow	2	
Both (overlap)	25/03/2015				Hooded Crow	3	
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	07:59	Hooded Crow	1	BL3 (telegraph pole); perched on pole. 0m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	10:01	Hooded Crow	2	fly over study area - 100m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	10:09	Hooded Crow	1	BL3 (railway track); perched on railway track. 3m from transect line

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Non-Breeding	01/12/2015	1hr 45mins starting at 15:00	1	15:26	Hooded Crow	1	PB4 (bare peat); flushed from bare peat. 50m from transect line
Non-Breeding	01/12/2015	1hr 45mins starting at 15:00	1	15:27	Hooded Crow	1	PB4 (bare peat); flying over bare peat. 25m from transect line
Non-Breeding	24/02/2016	1hr 15mins starting at 09:45	1	10:56	Hooded Crow	1	PB4 (bare peat); flies over. 0m from transect line
Both (Overlap)	31/03/2016	1hrs starting at 07:20	1	09:30	Hooded Crow	4	PB4 (bare peat): fly over transect. 0-25m from transect
Both (Overlap)	31/03/2016	3hrs 25mins starting at 09:40	5	09:40	Hooded Crow	2	PB4 (bare peat): fly over transect. 0-25m from transect
Both (Overlap)	31/03/2016	1hrs starting at 07:20	1	11:14	Hooded Crow	1	PB4 (bare peat): flies over bare peat. 0-25m from transect
Non-breeding	11/11/2013		1		Jay	4	
Non-breeding	26/02/2014		1		Jay	2	
Both (overlap)	25/03/2015		5		Jay	2	
Non-breeding	11/11/2013		2		Jackdaw	4	
Non-breeding	26/02/2014		1		Jackdaw	2	
Both (overlap)	25/03/2015				Jackdaw	4	
<b>Non-breeding</b>	<b>11/11/2013</b>		<b>1</b>		<b>Common Kestrel</b>	<b>1</b>	
<b>Non-breeding</b>	<b>11/11/2013</b>		<b>2</b>		<b>Common Kestrel</b>	<b>1</b>	
<b>Non-breeding</b>	<b>10/01/2014</b>		<b>3</b>		<b>Common Kestrel</b>	<b>1</b>	
<b>Non-breeding</b>	<b>10/01/2014</b>		<b>5</b>		<b>Common Kestrel</b>	<b>1</b>	
<b>Non-breeding</b>	<b>26/02/2014</b>		<b>1</b>		<b>Common Kestrel</b>	<b>1</b>	
<b>Non-breeding</b>	<b>26/02/2014</b>		<b>3</b>		<b>Common Kestrel</b>	<b>1</b>	
<b>Both (overlap)</b>	<b>25/03/2015</b>				<b>Common Kestrel</b>	<b>1</b>	
<b>Non-Breeding</b>	<b>21/10/2015</b>	<b>2hrs 25mins starting at 15:45</b>	<b>1</b>	<b>17:15</b>	<b>Common Kestrel</b>	<b>1</b>	<b>PB4 (bare peat with pioneer dry grassland); hunting over grassy area near quarry . 20m from transect line</b>

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	09:05	Common Kestrel	1	WS2 (new scrub); perched on bush and takes off foraging 18m from transect line
Non-Breeding	22/10/2015				Common Kestrel	1	PB4 (bare peat) - incidental record individual mobbing a pair of Peregrine after transect ends
Non-Breeding	01/12/2015	1hr 45mins starting at 15:00	1	15:20	Common Kestrel	1	WS2 (mature birch willow scrub); startled out of scrub by arrival of Grey Heron. 150m from transect line
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	09:40	Common Kestrel	1	ED5 (dead and burned logs); perched on longs, then lifts to go hunting. 8m from transect line
Both (Overlap)	31/03/2016			11:14	Common Kestrel	1	PB4 (bare peat); PB1 (remnant high bog): flies over, commuting. 0-25m from transect
Both (overlap)	25/03/2015		1		Northern Lapwing	2	
Both (Overlap)	31/03/2016	2hrs starting at 08:40	2	12:26	Northern Lapwing	1	PB4 (bare peat and pioneer poor fen); WS2 (mature birch willow scrub): display flight and calls. 100<m from transect
Both (Overlap)	31/03/2016	1hr 55mins starting at 07:45	4	12:34	Northern Lapwing	9	PB4 (bare peat and pioneer poor fen); WS2 (mature birch willow scrub): display dance and calls over bog
Non-breeding	11/11/2013		1		Linnet	3	
Non-breeding	11/11/2013		3		Linnet	4	
Non-breeding	10/01/2014		3		Linnet	3	
Non-breeding	26/02/2014		1		Linnet	2	
Non-breeding	26/02/2014		3		Linnet	6	
Non-breeding	11/11/2013		1		Lesser redpoll	8	
Non-breeding	11/11/2013		4		Lesser redpoll	4	
Non-breeding	10/01/2014		1		Lesser redpoll	4	
Non-breeding	10/01/2014		4		Lesser redpoll	5	
Non-breeding	26/02/2014		1		Lesser redpoll	12	

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Non-breeding	26/02/2014		4		Lesser redpoll	2	
Non-breeding	26/02/2014		5		Lesser redpoll	4	
Non-Breeding	21/10/2015	2hrs 25mins starting at 15:45	1	15:50	Lesser Redpoll	1	WL2 (treeline); calling in marginal vegetation. 3m from transect line
Non-Breeding	21/10/2015	2hrs 25mins starting at 15:45	1	16:22	Lesser Redpoll	1	WS1 (scrub); calling from grassy patch of scrub. 5m from transect line
Non-Breeding	21/10/2015	2hrs 25mins starting at 15:45	1	16:32	Lesser Redpoll	1	WS1 (scrub); calling from scrub. 7m from transect line
Non-Breeding	21/10/2015	2hrs 25mins starting at 15:45	1	16:55	Lesser Redpoll	1	WS1 (scrub); perched calling in a shrub. 12m from transect line
Non-Breeding	21/10/2015	2hrs 25mins starting at 15:45	1	16:59	Lesser Redpoll	4	WS1 (scrub); perched calling in a shrub. 12m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	08:04	Lesser Redpoll	1	WL2 (treeline); calling in trees. 12m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	08:06	Lesser Redpoll	1	WS1 (scrub); calling from bushes. 20m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	08:11	Lesser Redpoll	1	WL2 (treeline); call from trees. 18m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	08:17	Lesser Redpoll	1	WL2 (treeline); calling from boundary treeline. 8m from transect line
Non-Breeding	26/11/2015	1hr 50mins starting at 14:50	2	14:05	Lesser Redpoll	1	PB1 (remnant high bog); calling from heather. 5m from transect line
Non-Breeding	26/11/2015	1hr 50mins starting at 14:50	2	15:14	Lesser Redpoll	1	PB4 (bare peat with pioneer dry grassland); calling from long grass. 10m from transect line

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Non-Breeding	01/12/2015	1hr 45mins starting at 15:00	1	15:17	Lesser Redpoll	1	WL2 (treeline); calling from marginal vegetation in treeline. 10m from transect line
Non-Breeding	01/12/2015	1hr 45mins starting at 15:00	1	16:00	Lesser Redpoll	1	WS2 (mature birch willow scrub); calling. 10m from transect line
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	08:40	Lesser Redpoll	3	WL2 (treeline); calling. 10m from transect line
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	08:40	Lesser Redpoll	1	WS1 (scrub); calling. 15m from transect line
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	08:45	Lesser Redpoll	2	PB1 (remnant high bog); calling from heather. 4m from transect line
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	09:09	Lesser Redpoll	1	PB4 (bare peat); flies calling over peat. 1m from transect line
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	09:45	Lesser Redpoll	1	WS1 (scrub); calling. 10m from transect line
Non-Breeding	17/12/2015	1hr 15mins starting at 15:00	1	15:20	Lesser Redpoll	1	WS1 (scrub); in vegetation growing around gravel pit. 6m from transect line
Non-Breeding	17/12/2015	1hr 15mins starting at 15:00	1	15:27	Lesser Redpoll	1	WS1 (scrub); in trees around gravel pit. 10m from transect line
Non-Breeding	27/01/2016	1hr 55mins starting at 14:35	2	15:00	Lesser Redpoll	30	WS1 (scrub); flying and perch on tree. 7m from transect line
Non-Breeding	24/02/2016	1hr 15mins starting at 09:45	1	09:51	Lesser Redpoll	1	BL3 (telegraph wire); perched on wires. 10m from transect line
Both (Overlap)	31/03/2016			09:05	Lesser Redpoll	3	WS2 (birch woodland): perched in trees and foraging. 0-25m from transect
Both (Overlap)	31/03/2016	1hrs starting at 07:20	1	11:57	Lesser Redpoll	1	WL2 (treeline with pioneer <i>Molinia</i> ): calling from grass. 0-25m from transect

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Both (Overlap)	31/03/2016			12:09	Lesser Redpoll	2	WN7 (bog woodland): calls from trees. 0-25m from transect
Both (Overlap)	31/03/2016			12:26	Lesser Redpoll	1	WN7 (bog woodland): calls from thick vegetation. 0-25m from transect
Both (Overlap)	31/03/2016			12:46	Lesser Redpoll	2	PB1 (remnant high bog): calling. 0-25m from transect
Non-breeding	26/02/2014		4		Long-tailed Tit	6	
Both (overlap)	25/03/2015				Long-tailed Tit	6	
Non-Breeding	21/10/2015	2hrs 25mins starting at 15:45	1	15:51	Long-tailed Tit	1	PB1 (remnant high bog); calling from heather. 10m from transect line
Non-Breeding	21/10/2015	2hrs 25mins starting at 15:45	1	15:59	Long-tailed Tit	1	WL2 (treeline); calling in a pine tree. 1m from transect line
Non-Breeding	21/10/2015	2hrs 25mins starting at 15:45	1	16:33	Long-tailed Tit	1	WS1 (scrub); perched in tall bush. 5m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	08:13	Long-tailed Tit	1	WL2 (treeline); calling from vegetation. 10m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	08:25	Long-tailed Tit	2	PB1 (remnant high bog); foraging in heather. 2m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	08:53	Long-tailed Tit	1	PB1 (remnant high bog); call from heather. 15m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	08:56	Long-tailed Tit	1	WS2 (mature birch willow scrub); foraging. 20m from transect line
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	08:39	Long-tailed Tit	1	WL2 (treeline); calling. 10m from transect line
Non-Breeding	17/12/2015	1hr 15mins starting at 15:00	1	15:27	Long-tailed Tit	1	WS1 (scrub); in trees around gravel pit. 10m from transect line

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Non-Breeding	27/01/2016	1hr 55mins starting at 14:35	2	15:39	Long-tailed Tit	1	WS1 (scrub); calling. 10m from transect line
Non-Breeding	24/02/2016	1hr 15mins starting at 09:45	1	10:16	Long-tailed Tit	2	WS1 (scrub); calls from trees around gravel pit. 7m from transect line
Both (Overlap)	31/03/2016			10:10	Long-tailed Tit	3	WS1 (birch scrub with pioneer fen mosaic): foraging and calling to one another in trees. 0-25m from transect
Both (Overlap)	31/03/2016			12:09	Long-tailed Tit	1	WN7 (bog woodland): calls from trees. 0-25m from transect
<b>Non-breeding</b>	<b>11/11/2013</b>		<b>2</b>		<b>Mallard</b>	<b>2</b>	
<b>Non-breeding</b>	<b>11/11/2013</b>		<b>3</b>		<b>Mallard</b>	<b>4</b>	
<b>Non-breeding</b>	<b>11/11/2013</b>		<b>4</b>		<b>Mallard</b>	<b>3</b>	
<b>Non-breeding</b>	<b>10/01/2014</b>		<b>1</b>		<b>Mallard</b>	<b>4</b>	
<b>Non-breeding</b>	<b>10/01/2014</b>		<b>2</b>		<b>Mallard</b>	<b>2</b>	
<b>Non-breeding</b>	<b>10/01/2014</b>		<b>3</b>		<b>Mallard</b>	<b>5</b>	
<b>Non-breeding</b>	<b>26/02/2014</b>		<b>1</b>		<b>Mallard</b>	<b>3</b>	
<b>Non-breeding</b>	<b>26/02/2014</b>		<b>3</b>		<b>Mallard</b>	<b>2</b>	
<b>Both (overlap)</b>	<b>25/03/2015</b>				<b>Mallard</b>	<b>4</b>	
<b>Both (overlap)</b>	<b>25/03/2015</b>		<b>2</b>		<b>Mallard</b>	<b>1</b>	
<b>Non-Breeding</b>	<b>22/10/2015</b>				<b>Mallard</b>	<b>1</b>	<b>FL4 (drainage channel) - incidental record - flushed from drain by observer on return route from transect</b>
<b>Non-Breeding</b>	<b>17/12/2015</b>	<b>1hr 15mins starting at 15:00</b>	<b>1</b>	<b>15:15</b>	<b>Mallard</b>	<b>18</b>	<b>offsite; swimming in quarry. 25m from transect line</b>
<b>Both (Overlap)</b>	<b>31/03/2016</b>			<b>12:34</b>	<b>Mallard</b>	<b>2</b>	<b>PB4 (bare peat); WS1 (birch scrub): fly over transect and bare peat. 0-25m from transect</b>
Non-breeding	11/11/2013		1		Magpie	3	
Non-breeding	11/11/2013		2		Magpie	1	

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Non-breeding	11/11/2013		5		Magpie	3	
Non-breeding	10/01/2014		1		Magpie	1	
Non-breeding	10/01/2014		4		Magpie	3	
Non-breeding	10/01/2014		5		Magpie	1	
Non-breeding	26/02/2014		1		Magpie	1	
Both (overlap)	25/03/2015				Magpie	1	
Both (overlap)	25/03/2015		1		Magpie	2	
Both (overlap)	25/03/2015		3		Magpie	1	
Non-Breeding	21/10/2015	2hrs 25mins starting at 15:45	1	17:17	Magpie	1	WS1 (scrub); flying over scrub near quarry. 35m from transect line
Non-Breeding	01/12/2015	1hr 45mins starting at 15:00	1	15:50	Magpie	1	WS2 (mature birch willow scrub); flies out of trees. 10m from transect line
Non-Breeding	24/02/2016	1hr 15mins starting at 09:45	1	09:45	Magpie	1	ED2&FL8 (disused quarry flooded with water); audible calling. 30m from transect line
Non-Breeding	24/02/2016	1hr 15mins starting at 09:45	1	09:52	Magpie	1	ED2&FL8 (disused quarry flooded with water); perched on tree in quarry calling. 20m from transect line
<b>Non-breeding</b>	<b>11/11/2013</b>		<b>1</b>		<b>Common Moorhen</b>	<b>1</b>	
<b>Non-breeding</b>	<b>11/11/2013</b>		<b>3</b>		<b>Common Moorhen</b>	<b>1</b>	
<b>Non-breeding</b>	<b>10/01/2014</b>		<b>3</b>		<b>Common Moorhen</b>	<b>2</b>	
<b>Non-breeding</b>	<b>26/02/2014</b>		<b>1</b>		<b>Common Moorhen</b>	<b>2</b>	
<b>Non-breeding</b>	<b>26/02/2014</b>		<b>3</b>		<b>Common Moorhen</b>	<b>1</b>	
<b>Both (overlap)</b>	<b>25/03/2015</b>				<b>Common Moorhen</b>	<b>2</b>	
<b>Both (overlap)</b>	<b>25/03/2015</b>		<b>1</b>		<b>Common Moorhen</b>	<b>1</b>	
<b>Both (overlap)</b>	<b>25/03/2015</b>		<b>3</b>		<b>Common Moorhen</b>	<b>1</b>	
<b>Both (overlap)</b>	<b>25/03/2015</b>		<b>5</b>		<b>Common Moorhen</b>	<b>1</b>	
Non-breeding	11/11/2013		1		Meadow pipit	6	

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Non-breeding	11/11/2013		2		Meadow pipit	3	
Non-breeding	11/11/2013		4		Meadow pipit	4	
Non-breeding	11/11/2013		5		Meadow pipit	2	
Non-breeding	10/01/2014		1		Meadow pipit	5	
Non-breeding	10/01/2014		2		Meadow pipit	2	
Non-breeding	10/01/2014		3		Meadow pipit	2	
Non-breeding	10/01/2014		4		Meadow pipit	2	
Non-breeding	26/02/2014		1		Meadow pipit	7	
Non-breeding	26/02/2014		2		Meadow pipit	4	
Non-breeding	26/02/2014		4		Meadow pipit	5	
Non-breeding	26/02/2014		5		Meadow pipit	3	
Both (overlap)	25/03/2015		1		Meadow pipit	6	
Both (overlap)	25/03/2015		2		Meadow pipit	7	
Both (overlap)	25/03/2015		3		Meadow pipit	3	
Both (overlap)	25/03/2015		5		Meadow pipit	5	
Both (overlap)	25/03/2015		1		Meadow pipit	3	
Non-Breeding	21/10/2015	2hrs 25mins starting at 15:45	1	15:58	Meadow Pipit	1	ED2 (works area); calling near teahouse in works area. 15m from transect line
Non-Breeding	21/10/2015	2hrs 25mins starting at 15:45	1	16:16	Meadow Pipit	1	PB4 (bare peat); calling from bare peat. 10m from transect line
Non-Breeding	21/10/2015	2hrs 25mins starting at 15:45	1	16:20	Meadow Pipit	1	WS1 (scrub); flying within scrub adjacent to gravel pit. 15m from transect line
Non-Breeding	21/10/2015	2hrs 25mins starting at 15:45	1	16:22	Meadow Pipit	1	PB4 (bare peat); calling from peat. 10m from transect line
Non-Breeding	21/10/2015	2hrs 25mins starting at 15:45	1	16:26	Meadow Pipit	2	PB4 (bare peat); fly over bare peat. 0m from transect line

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Non-Breeding	21/10/2015	2hrs 25mins starting at 15:45	1	16:27	Meadow Pipit	35	PB4 (bare peat); WS1 (scrub); fly over. 15m from transect line
Non-Breeding	21/10/2015	2hrs 25mins starting at 15:45	1	16:34	Meadow Pipit	15	WS1 (scrub); flying over scrub. 0m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	07:59	Meadow Pipit	1	PB4 (bare peat); WS1 (scrub); fly over bare peat and into vegetation. 0m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	08:08	Meadow Pipit	1	in flight - 10m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	08:14	Meadow Pipit	2	PB4 (bare peat); flying over peat. 0m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	08:20	Meadow Pipit	2	PB4 (bare peat); fly over bare peat. 9m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	08:32	Meadow Pipit	3	PB1 (remnant high bog); fly over heather. 15m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	09:06	Meadow Pipit	2	PB4 (bare peat with pioneer dry grassland); flying over. 0m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	09:19	Meadow Pipit	1	PB4 (bare peat with pioneer dry grassland); foraging in grass and thistles. 0m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	09:21	Meadow Pipit	3	PB4 (bare peat with pioneer dry grassland); fly over grass. 0m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	09:29	Meadow Pipit	1	WS1 (birch willow scrub); flying through scrub. 0m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	10:02	Meadow Pipit	1	WS1 (scrub); fly over scrub. 5m from transect line

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	10:20	Meadow Pipit	1	PB4 (bare peat with pioneer dry grassland); calling from grass. 6m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	10:20	Meadow Pipit	5	flying over study area - 0m from transect line
Non-Breeding	26/11/2015	1hr 50mins starting at 14:50	2	14:55	Meadow Pipit	1	PB4 (bare peat); fly up from peat. 15m from transect line
Non-Breeding	26/11/2015	1hr 50mins starting at 14:50	2	15:02	Meadow Pipit	1	calling in flight - 5m from transect line
Non-Breeding	26/11/2015	1hr 50mins starting at 14:50	2	15:15	Meadow Pipit	1	PB4 (bare peat with pioneer dry grassland); calling from long grass. 10m from transect line
Non-Breeding	26/11/2015	1hr 50mins starting at 14:50	2	15:18	Meadow Pipit	1	WS2 (mature birch willow scrub); calling from vegetation. 10m from transect line
Non-Breeding	26/11/2015	1hr 50mins starting at 14:50	2	15:45	Meadow Pipit	1	WS1 (scrub); calling from vegetation. 2m from transect line
Non-Breeding	01/12/2015	1hr 45mins starting at 15:00	1	15:19	Meadow Pipit	19	PB4 (bare peat with pioneer dry grassland); flying over. 40m from transect line
Non-Breeding	01/12/2015	1hr 45mins starting at 15:00	1	15:35	Meadow Pipit	1	PB4 (bare peat with pioneer dry grassland); disturbed from young grassy area. 1m from transect line
Non-Breeding	01/12/2015	1hr 45mins starting at 15:00	1	15:45	Meadow Pipit	7	PB4 (bare peat with pioneer dry grassland); disturbed from young grassy area. 1m from transect line
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	09:01	Meadow Pipit	1	PB4 (bare peat); fly over bare peat calling. 0m from transect line
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	09:05	Meadow Pipit	1	PB1 (remnant high bog); calling from heather. 4m from transect line

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	09:08	Meadow Pipit	8	PB4 (bare peat with pioneer poor fen); foraging in reeds and flooded peat. 2m from transect line
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	09:09	Meadow Pipit	2	PB4 (bare peat); fly over. 0m from transect line
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	09:25	Meadow Pipit	2	PB4 (bare peat); fly over. 5m from transect line
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	09:35	Meadow Pipit	1	PB4 (bare peat); flying over. 0m from transect line
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	09:41	Meadow Pipit	40	PB4 (bare peat with pioneer dry grassland); flushed by hunting Kestrel. 50m from transect line
Non-Breeding	17/12/2015	1hr 15mins starting at 15:00	1	15:18	Meadow Pipit	1	ED2 (works area); flying around concrete base of communications tower. 0m from transect line
Non-Breeding	27/01/2016	1hr 55mins starting at 14:35	2	15:01	Meadow Pipit	1	PB4 (bare peat with pioneer dry grassland); flushed from grass. 1m from transect line
Non-Breeding	27/01/2016	1hr 55mins starting at 14:35	2	15:02	Meadow Pipit	1	BL3 (road); flushed from gravel road. 0m from transect line
Non-Breeding	27/01/2016	1hr 55mins starting at 14:35	2	16:00	Meadow Pipit	1	PB1 (remnant high bog); flushed from heather. 4m from transect line
Non-Breeding	27/01/2016	1hr 55mins starting at 14:35	2	16:19	Meadow Pipit	4	PB4 (bare peat with pioneer dry grassland); flying and foraging. 0m from transect line
Non-Breeding	27/01/2016	1hr 55mins starting at 14:35	2	16:20	Meadow Pipit	1	PB4 (bare peat with pioneer dry grassland); foraging. 0m from transect line
Non-Breeding	24/02/2016	1hr 15mins starting at 09:45	1	10:00	Meadow Pipit	1	PB4 (bare peat); fly across peat. 0m from transect line

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Non-Breeding	24/02/2016	1hr 15mins starting at 09:45	1	10:05	Meadow Pipit	3	ED2 (disused gravel pit); flying over gravel pit. 0m from transect line
Non-Breeding	24/02/2016	1hr 15mins starting at 09:45	1	10:34	Meadow Pipit	2	PB4 (bare peat with pioneer dry grassland); one singing and one calling from grassy area, then fly over peat. 15m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	10:19	Meadow Pipit	1	PB4 (bare peat); calling. 0-25m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	11:08	Meadow Pipit	2	ED5 (brash uprooted tree trunks); PB4&GS4 (wet grassland bare peat mosaic); perched on trunks, calling. 0-25m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	11:35	Meadow Pipit	1	WS1 (birch scrub); flew in front of transect. 0m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	11:38	Meadow Pipit	1	WS2 (birch scrub woodland); calling. 0-25m from transect line
Both (Overlap)	31/03/2016	2hrs starting at 08:40	2	08:58	Meadow Pipit	3	PB4 (bare peat with pioneer poor fen): perched among grasses, then begins singing and a display flight. 0-25m from transect
Both (Overlap)	31/03/2016	2hrs starting at 10:50	3	09:05	Meadow Pipit	7	PB4 (bare peat): perching on peat, singing and calling to one another. 0-25m from transect
Both (Overlap)	31/03/2016	1hr 55mins starting at 07:45	4	09:30	Meadow Pipit	1	PB4 (bare peat): fly over transect. 0-25m from transect
Both (Overlap)	31/03/2016	3hrs 25mins starting at 09:40	5	09:40	Meadow Pipit	2	PB4 (bare peat): perching on bare peat and flying. 0-25m from transect
Both (Overlap)	31/03/2016			11:40	Meadow Pipit	1	PB4 (bare peat): fly over bare peat. 0-25m from transect
Both (Overlap)	31/03/2016			11:47	Meadow Pipit	1	PB4 (bare peat): fly over bare peat. 0-25m from transect

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Both (Overlap)	31/03/2016			12:46	Meadow Pipit	1	PB1 (remnant high bog with young conifers): calling and flying around vegetation. 0-25m from transect
<b>Non-breeding</b>	<b>11/11/2013</b>		<b>1</b>		<b>Mute Swan</b>	<b>3</b>	
<b>Non-breeding</b>	<b>10/01/2014</b>		<b>1</b>		<b>Mute Swan</b>	<b>2</b>	
<b>Both (overlap)</b>	<b>25/03/2015</b>				<b>Mute Swan</b>	<b>1</b>	
<b>Both (overlap)</b>	<b>25/03/2015</b>				<b>Mute Swan</b>	<b>2</b>	
Non-breeding	11/11/2013		1		Mistle thrush	4	
Non-breeding	11/11/2013		5		Mistle thrush	2	
Non-breeding	10/01/2014		1		Mistle thrush	2	
Non-breeding	10/01/2014		4		Mistle thrush	1	
Non-breeding	26/02/2014		1		Mistle thrush	2	
Non-breeding	26/02/2014		2		Mistle thrush	1	
Both (overlap)	25/03/2015				Mistle thrush	4	
Both (overlap)	25/03/2015				Mistle thrush	2	
Both (Overlap)	31/03/2016	1hrs starting at 07:20	1	10:25	Mistle thrush	1	WS2 (mature birch willow scrub): singing in treeline to north. 100<m from transect
Both (Overlap)	31/03/2016	3hrs 25mins starting at 09:40	5	10:58	Mistle thrush	1	WS2 (mature birch willow scrub): singing in trees. 25-100m from transect
<b>Non-Breeding</b>	<b>22/10/2015</b>	<b>1hr 40mins starting at 07:50</b>	<b>2</b>	<b>09:07</b>	<b>Peregrine Falcon</b>	<b>2</b>	<b>PB4 (bare peat); resting on bare peat and disturbed by presence of observer. Fly up and mob observer, alarm calling. 25m from transect line</b>
<b>Non-Breeding</b>	<b>22/10/2015</b>	<b>1hr 40mins starting at 07:50</b>	<b>2</b>	<b>09:22</b>	<b>Peregrine Falcon</b>	<b>1</b>	<b>BL3 (meteorological mast); perched on mast. 50m from transect line</b>
<b>Non-Breeding</b>	<b>22/10/2015</b>				<b>Peregrine Falcon</b>	<b>2</b>	<b>PB4 (bare peat) - incidental record of male and female resting on bare peat and then mobbed by Kestrel after transect ends</b>

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Non-breeding	11/11/2013		1		Common Pheasant	1	
Non-breeding	11/11/2013		2		Common Pheasant	2	
Non-breeding	11/11/2013		4		Common Pheasant	1	
Non-breeding	10/01/2014		2		Common Pheasant	1	
Non-breeding	10/01/2014		5		Common Pheasant	2	
Non-breeding	26/02/2014		1		Common Pheasant	2	
Both (overlap)	25/03/2015		1		Common Pheasant	2	
Both (overlap)	25/03/2015		5		Common Pheasant	1	
Both (overlap)	25/03/2015				Common Pheasant	1	
Both (overlap)	25/03/2015				Common Pheasant	1	
Both (Overlap)	31/03/2016	1hrs starting at 07:20	1	10:25	Common Pheasant	1	habitat not identified: calling in vegetation. 100<m from transect
Non-breeding	11/11/2013		1		Pied Wagtail	1	
Non-breeding	11/11/2013		2		Pied Wagtail	2	
Non-breeding	10/01/2014		1		Pied Wagtail	2	
Non-breeding	10/01/2014		5		Pied Wagtail	1	
Both (overlap)	25/03/2015		3		Pied Wagtail	3	
Both (overlap)	25/03/2015		4		Pied Wagtail	2	
Both (overlap)	25/03/2015		5		Pied Wagtail	1	
Non-Breeding	21/10/2015	2hrs 25mins starting at 15:45	1	15:55	Pied Wagtail	1	PB4 (bare peat); calling from on peat. 10m from transect line
Non-breeding	11/11/2013		1		European Robin	1	
Non-breeding	11/11/2013		3		European Robin	2	
Non-breeding	11/11/2013		4		European Robin	2	
Non-breeding	11/11/2013		5		European Robin	1	
Non-breeding	10/01/2014		3		European Robin	1	
Non-breeding	10/01/2014		4		European Robin	1	

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Non-breeding	10/01/2014		5		European Robin	1	
Non-breeding	26/02/2014		1		European Robin	2	
Non-breeding	26/02/2014		2		European Robin	2	
Non-breeding	26/02/2014		4		European Robin	1	
Both (overlap)	25/03/2015				European Robin	2	
Both (overlap)	25/03/2015		1		European Robin	3	
Both (overlap)	25/03/2015		2		European Robin	2	
Both (overlap)	25/03/2015		3		European Robin	3	
Both (overlap)	25/03/2015		1		European Robin	3	
Non-Breeding	21/10/2015	2hrs 25mins starting at 15:45	1	15:56	European Robin	1	WL2 (treeline); calling from boundary treeline. 3m from transect line
Non-Breeding	21/10/2015	2hrs 25mins starting at 15:45	1	16:10	European Robin	1	PB4 (bare peat); territory calls over bare peat next to treeline. 5m from transect line
Non-Breeding	21/10/2015	2hrs 25mins starting at 15:45	1	16:30	European Robin	1	WS1 (scrub); calling from scrub. 6m from transect line
Non-Breeding	21/10/2015	2hrs 25mins starting at 15:45	1	16:33	European Robin	1	WS1 (scrub); calling in tall bush. 5m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	07:59	European Robin	2	WL2 (treeline); calling from boundary treeline vegetation. 15m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	08:01	European Robin	1	WL2 (treeline); calling from marginal vegetation in treeline. 15m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	08:02	European Robin	1	WL2 (treeline); singing in trees. 10m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	08:07	European Robin	1	WL2 (treeline); singing in trees. 18m from transect line

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	08:14	European Robin	1	WL2 (treeline); calling from boundary treeline. 6m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	08:56	European Robin	2	WS2 (mature birch willow scrub); calling and singing. 20m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	09:37	European Robin	1	WS1 (birch willow scrub); singing in scrub. 30m from transect line
Non-Breeding	26/11/2015	1hr 50mins starting at 14:50	2	15:16	European Robin	1	WS2 (mature birch willow scrub); singing from scrub. 20m from transect line
Non-Breeding	26/11/2015	1hr 50mins starting at 14:50	2	15:19	European Robin	1	WS2 (mature birch willow scrub); territory calls from vegetation. 15m from transect line
Non-Breeding	01/12/2015	1hr 45mins starting at 15:00	1	15:00	European Robin	1	WL2 (treeline); calling from marginal vegetation in treeline. 5m from transect line
Non-Breeding	01/12/2015	1hr 45mins starting at 15:00	1	15:16	European Robin	1	WL2 (treeline); territory calls from marginal vegetation. 10m from transect line
Non-Breeding	01/12/2015	1hr 45mins starting at 15:00	1	15:51	European Robin	1	WS2 (mature birch willow scrub); territory calls. 10m from transect line
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	08:35	European Robin	3	WL2 (treeline); singing. 10m from transect line
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	09:14	European Robin	2	WS2 (mature birch willow scrub); singing in young trees. 10m from transect line
Non-Breeding	17/12/2015	1hr 15mins starting at 15:00	1	15:20	European Robin	1	WS1 (scrub); in vegetation growing around gravel pit. 6m from transect line
Non-Breeding	17/12/2015	1hr 15mins starting at 15:00	1	15:31	European Robin	2	WS1 (scrub); territory calls from trees around gravel pit. 10m from transect line

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Non-Breeding	27/01/2016	1hr 55mins starting at 14:35	2	14:35	European Robin	1	WS1 (scrub); singing. 10m from transect line
Non-Breeding	27/01/2016	1hr 55mins starting at 14:35	2	15:06	European Robin	1	WL2 (treeline); singing in treeline. 6m from transect line
Non-Breeding	27/01/2016	1hr 55mins starting at 14:35	2	16:02	European Robin	1	WL2 (treeline); singing. 4m from transect line
Non-Breeding	24/02/2016	1hr 15mins starting at 09:45	1	09:47	European Robin	1	WL2 (treeline); singing in trees next to quarry. 5m from transect line
Non-Breeding	24/02/2016	1hr 15mins starting at 09:45	1	09:59	European Robin	1	ED2 (works area); perched on tree in machinery yard, tick-calling. 5m from transect line
Non-Breeding	24/02/2016	1hr 15mins starting at 09:45	1	10:54	European Robin	2	ED2 (works area); perched on top of machinery in the yard. 12m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	10:08	European Robin	1	WL2 (treeline); singing. 0-25m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	11:31	European Robin	1	WS2 (birch scrub woodland); singing. 25-100m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	11:38	European Robin	1	WS2 (birch scrub woodland) - calling
Both (Overlap)	31/03/2016	2hrs starting at 08:40	2	09:05	European Robin	1	WS2 (birch woodland): singing in trees. 0-25m from transect
Both (Overlap)	31/03/2016	2hrs starting at 10:50	3	10:25	European Robin	2	WS1 (birch scrub): singing in vegetation. 25-100m from transect
Both (Overlap)	31/03/2016	1hr 55mins starting at 07:45	4	10:58	European Robin	2	WS1 (birch scrub): singing and foraging in scrub. 0-25m from transect
Both (Overlap)	31/03/2016	3hrs 25mins starting at 09:40	5	11:14	European Robin	1	WN7 (bog woodland): singing in trees. 25-100m from transect

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Both (Overlap)	31/03/2016			11:57	European Robin	1	WL2 (treeline with pioneer <i>Molinia</i> ): singing in trees. 0-25m from transect
Both (Overlap)	31/03/2016			12:09	European Robin	2	WN7 (bog woodland): two males audible singing in area of woodland. 0-25m from transect
Both (Overlap)	31/03/2016			12:26	European Robin	1	WD4 (conifer plantation); WS2 (birch woodland): singing in vegetation. 0-25m from transect
Non-breeding	11/11/2013		1		Reed bunting	3	
Non-breeding	11/11/2013		3		Reed bunting	1	
Non-breeding	10/01/2014		1		Reed bunting	1	
Non-breeding	10/01/2014		2		Reed bunting	2	
Non-breeding	26/02/2014		1		Reed bunting	2	
Non-breeding	26/02/2014		2		Reed bunting	1	
Non-breeding	26/02/2014		3		Reed bunting	2	
Both (overlap)	25/03/2015				Reed Bunting	1	
Both (overlap)	25/03/2015				Reed Bunting	1	
Both (Overlap)	31/03/2016			09:05	Reed Bunting	2	WS2 (birch woodland): perched and foraging. 0-25m from transect
Both (Overlap)	31/03/2016			10:10	Reed Bunting	1	WS1 (birch scrub with pioneer fen mosaic): perched in tree roosting. 0-25m from transect
Non-breeding	10/01/2014		1		Redwing	18	
Non-breeding	10/01/2014		4		Redwing	5	
Non-breeding	26/02/2014		1		Redwing	8	
Non-breeding	26/02/2014		1		Common Raven	2	
Non-breeding	26/02/2014		2		Common Raven	2	
Both (overlap)	25/03/2015		1		Common Raven	3	
Non-Breeding	21/10/2015	2hrs 25mins starting at 15:45	1	16:12	Rook	1	WS1 (scrub); flying through scrub. 25m from transect line

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	07:56	Rook	1	flying over study area - 0m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	09:36	Rook	2	flying through study area - 0m from transect line
Non-Breeding	26/11/2015	1hr 50mins starting at 14:50	2	15:36	Rook	1	flying over study area - 300m from transect line
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	09:00	Rook	2	PB4 (bare peat); fly over peat calling. 0m from transect line
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	09:43	Rook	1	WS1 (scrub); perched on young tree. 25m from transect line
Non-Breeding	24/02/2016	1hr 15mins starting at 09:45	1	09:46	Rook	1	PB4 (bare peat); audible calling. 30m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	10:09	Rook	2	PB4 (bare peat); flying over approximately 10m high. 0-25m from transect line
Both (Overlap)	31/03/2016	2hrs starting at 08:40	2	10:25	Rook	1	WS1 (birch scrub): fly over transect. 0-25m from transect
Both (Overlap)	31/03/2016			11:14	Rook	1	PB4 (bare peat): flies over bare peat. 0-25m from transect
<b>Both (Overlap)</b>	<b>31/03/2016</b>			<b>08:58</b>	<b>Ringed Plover</b>	<b>2</b>	<b>PB4 (bare peat with pioneer poor fen): foraging around flooded bare peat and poor fen. 0-25m from transect. See Map Ref. 012</b>
Non-breeding	26/02/2014		1		Sky Lark	3	
Non-breeding	26/02/2014		2		Sky Lark	1	
Both (overlap)	25/03/2015		3		Sky Lark	3	
Both (overlap)	25/03/2015				Sky Lark	2	
Both (overlap)	25/03/2015				Sky Lark	1	
Both (overlap)	25/03/2015				Sky Lark	3	

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Both (overlap)	25/03/2015		1		Sky Lark	2	
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	09:18	Sky Lark	1	WS2 (new scrub); calling. 18m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	09:52	Sky Lark	1	PB4 (bare peat); WS1 (scrub); flying over peat and scrub. 25m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	10:11	Sky Lark	2	PB4 (bare peat with pioneer dry grassland); calling in grass. 6m from transect line
Non-Breeding	24/02/2016	1hr 15mins starting at 09:45	1	10:27	Sky Lark	1	PB4 (bare peat) - calls audible
Non-Breeding	24/02/2016	1hr 15mins starting at 09:45	1	10:38	Sky Lark	4	PB4 (bare peat with pioneer dry grassland); one individual flies out of grass and performs song and display flight. Joined by a seconds individual and engage in antagonistic interaction. Two more appear. 5m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	10:10	Sky Lark	1	PB4 (bare peat); singing. 0-25m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	10:24	Sky Lark	1	PB4 (bare peat); flew up from peat and headed N, singing. 25-200m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	10:25	Sky Lark	1	PB4 (bare peat); singing. >100m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	10:53	Sky Lark	1	PB4 (bare peat); flying over to S 5m high. 0-25m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	11:17	Sky Lark	2	flying over - 0m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	11:23	Sky Lark	2	WS1 (birch scrub); PB4 (bare peat with recolonising dry bog plant communities); flying over. 0m from transect line

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Both (Overlap)	31/03/2016	2hrs starting at 08:40	2	09:05	Sky Lark	5	WS2 (birch woodland); PB4 (bare peat and pioneer poor fen): singing and displaying. 0-25m from transect
Both (Overlap)	31/03/2016	2hrs starting at 10:50	3	09:40	Sky Lark	3	PB4 (bare peat): singing and display flights over bare peat. 0-25m from transect
Both (Overlap)	31/03/2016	1hr 55mins starting at 07:45	4	09:54	Sky Lark	10+	PB4 (bare peat with pioneer poor fen): large flock, singing and display flights, perching and chasing. 0-25m from transect
Both (Overlap)	31/03/2016	3hrs 25mins starting at 09:40	5	10:10	Sky Lark	2	WS1 (birch scrub with pioneer fen mosaic): foraging in grass and singing. 0-25m from transect
Both (Overlap)	31/03/2016			12:09	Sky Lark	1	GS2 (dry grassland in riparian area): singing and display song. 0-25m from transect
Both (Overlap)	31/03/2016			12:26	Sky Lark	1	PB4 (bare peat): singing over bare peat. 0-25m from transect
Non-breeding	11/11/2013		1		Stonechat	2	
Non-breeding	11/11/2013		3		Stonechat	1	
Non-breeding	26/02/2014		1		Stonechat	1	
Non-breeding	26/02/2014		2		Stonechat	2	
Both (overlap)	25/03/2015				Stonechat	2	
Both (overlap)	25/03/2015				Stonechat	2	
Both (overlap)	25/03/2015				Stonechat	2	
Non-Breeding	21/10/2015	2hrs 25mins starting at 15:45	1	16:51	Stonechat	1	PB4 (bare peat with pioneer dry grassland); calling in grassy area and perched on grass. 10m from transect line
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	08:31	Stonechat	1	PB1 (remnant high bog); perched in heather. 13m from transect line

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	09:20	Stonechat	2	WS1 (birch willow scrub); perched on bush. 1m from transect line
Non-Breeding	17/12/2015	1hr 15mins starting at 15:00	1	15:44	Stonechat	1	PB4 (bare peat with pioneer dry grassland); perched on grass. 2m from transect line
Non-Breeding	17/12/2015	1hr 15mins starting at 15:00	1	15:49	Stonechat	2	PB4 (bare peat); foraging on peat. 0m from transect line
Non-Breeding	24/02/2016	1hr 15mins starting at 09:45	1	10:10	Stonechat	1	WS1 (scrub); singing in trees around gravel pit. 5m from transect line
Both (Overlap)	31/03/2016			10:10	Stonechat	1	WS1 (birch scrub with pioneer fen mosaic); calls audible. 0-25m from transect
<b>Both (overlap)</b>	<b>25/03/2015</b>		<b>1</b>		<b>Eurasian Sparrowhawk</b>	<b>1</b>	
<b>Both (overlap)</b>	<b>25/03/2015</b>		<b>3</b>		<b>Eurasian Sparrowhawk</b>	<b>1</b>	
<b>Non-breeding</b>	<b>11/11/2013</b>		<b>1</b>		<b>Common Snipe</b>	<b>2</b>	
<b>Non-breeding</b>	<b>11/11/2013</b>		<b>5</b>		<b>Common Snipe</b>	<b>2</b>	
<b>Non-breeding</b>	<b>10/01/2014</b>		<b>1</b>		<b>Common Snipe</b>	<b>3</b>	
<b>Non-breeding</b>	<b>10/01/2014</b>		<b>3</b>		<b>Common Snipe</b>	<b>1</b>	
<b>Non-breeding</b>	<b>10/01/2014</b>		<b>4</b>		<b>Common Snipe</b>	<b>1</b>	
<b>Non-breeding</b>	<b>26/02/2014</b>		<b>1</b>		<b>Common Snipe</b>	<b>1</b>	
<b>Both (overlap)</b>	<b>25/03/2015</b>		<b>5</b>		<b>Common Snipe</b>	<b>2</b>	
<b>Both (overlap)</b>	<b>25/03/2015</b>				<b>Common Snipe</b>	<b>1</b>	
<b>Both (overlap)</b>	<b>25/03/2015</b>		<b>1</b>		<b>Common Snipe</b>	<b>6</b>	
<b>Both (overlap)</b>	<b>25/03/2015</b>		<b>4</b>		<b>Common Snipe</b>	<b>6</b>	
<b>Non-Breeding</b>	<b>26/11/2015</b>	<b>1hr 50mins starting at 14:50</b>	<b>2</b>	<b>15:25</b>	<b>Common Snipe</b>	<b>1</b>	<b>FL4 (drainage channel); flushed by observer. 1m from transect line</b>

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
<b>Non-Breeding</b>	<b>26/11/2015</b>	<b>1hr 50mins starting at 14:50</b>	<b>2</b>	<b>15:35</b>	<b>Common Snipe</b>	<b>1</b>	<b>FL4 (drainage channel); flushed by observer and flies calling. 15m from transect line</b>
<b>Non-Breeding</b>	<b>27/01/2016</b>	<b>1hr 55mins starting at 14:35</b>	<b>2</b>	<b>14:40</b>	<b>Common Snipe</b>	<b>1</b>	<b>FL4 (drainage channel); flushed by observer. 1m from transect line</b>
<b>Both (Overlap)</b>	<b>31/03/2016</b>	<b>1hrs starting at 07:20</b>	<b>1</b>	<b>11:40</b>	<b>Common Snipe</b>	<b>1</b>	<b>FW4 (drainage ditch): flushed from drain. 0-25m from transect</b>
Non-breeding	11/11/2013		1		Song thrush	1	
Non-breeding	11/11/2013		2		Song thrush	2	
Non-breeding	11/11/2013		4		Song thrush	2	
Non-breeding	10/01/2014		1		Song thrush	2	
Non-breeding	26/02/2014		1		Song thrush	1	
Non-breeding	26/02/2014		2		Song thrush	1	
Non-breeding	26/02/2014		3		Song thrush	1	
Both (overlap)	25/03/2015		4		Song Thrush	2	
Both (overlap)	25/03/2015		5		Song Thrush	2	
Both (overlap)	25/03/2015		5		Song Thrush	1	
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	08:36	Song Thrush	1	WL2 (treeline); singing. 10m from transect line
Both (Overlap)	31/03/2016			10:10	Song Thrush	1	WS1 (birch scrub with pioneer fen mosaic): singing in sparse vegetation. 0-25m from transect
Both (Overlap)	31/03/2016	1hrs starting at 07:20	1	12:09	Song Thrush	1	WN7 (bog woodland): singing in trees. 0-25m from transect
<b>Non-breeding</b>	<b>11/11/2013</b>		<b>3</b>		<b>Eurasian Teal</b>	<b>4</b>	
<b>Non-breeding</b>	<b>10/01/2014</b>		<b>3</b>		<b>Eurasian Teal</b>	<b>2</b>	
Both (overlap)	25/03/2015		2		Wheatear	1	

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Both (overlap)	31/03/2016		4	09:01	Water Rail	2+	fen and swamp and pioneer reedbeds inundated with surface water 0-25m from transect. Multiple calls and songs heard from suitable breeding habitat indicating more than one individual present - probably breeding. See Map Ref. 031
Non-breeding	11/11/2013		1		Wood Pigeon	6	
Non-breeding	11/11/2013		2		Wood Pigeon	6	
Non-breeding	11/11/2013		3		Wood Pigeon	1	
Non-breeding	11/11/2013		5		Wood Pigeon	4	
Non-breeding	10/01/2014		1		Wood Pigeon	3	
Non-breeding	10/01/2014		2		Wood Pigeon	2	
Non-breeding	10/01/2014		4		Wood Pigeon	8	
Non-breeding	10/01/2014		5		Wood Pigeon	3	
Non-breeding	26/02/2014		1		Wood Pigeon	2	
Non-breeding	26/02/2014		2		Wood Pigeon	1	
Non-breeding	26/02/2014		3		Wood Pigeon	2	
Non-breeding	26/02/2014		4		Wood Pigeon	7	
Both (overlap)	25/03/2015		3		Wood Pigeon	3	
Both (overlap)	25/03/2015				Wood Pigeon	2	
Both (overlap)	25/03/2015				Wood Pigeon	4	
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	09:31	Wood Pigeon	1	WL2 (treeline); flying along treeline. 150m from transect line
Non-Breeding	27/01/2016	1hr 55mins starting at 14:35	2	16:03	Wood Pigeon	1	audible calling
Non-Breeding	24/02/2016	1hr 15mins starting at 09:45	1	09:48	Wood Pigeon	1	offsite; fly over heather and into trees. 55m from transect line

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Both (Overlap)	31/03/2016	2hrs starting at 10:50	3	10:58	Wood Pigeon	1	WS2 (mature birch willow scrub): perched in tree. 25-100m from transect
Both (Overlap)	31/03/2016	1hrs starting at 07:20	1	12:26	Wood Pigeon	1	WD4 (conifer plantation); PB4 (bare peat): flushed from conifers and leaves calling. 0-25m from transect
Both (Overlap)	31/03/2016	2hrs starting at 08:40	2	12:34	Wood Pigeon	1	WN7 (bog woodland): perched in trees calling. 0-25m from transect
Non-breeding	11/11/2013		1		Winter Wren	1	
Non-breeding	11/11/2013		2		Winter Wren	2	
Non-breeding	11/11/2013		4		Winter Wren	3	
Non-breeding	11/11/2013		5		Winter Wren	2	
Non-breeding	10/01/2014		1		Winter Wren	3	
Non-breeding	10/01/2014		2		Winter Wren	1	
Non-breeding	10/01/2014		4		Winter Wren	1	
Non-breeding	10/01/2014		5		Winter Wren	1	
Non-breeding	26/02/2014		1		Winter Wren	2	
Non-breeding	26/02/2014		2		Winter Wren	1	
Non-breeding	26/02/2014		3		Winter Wren	2	
Non-breeding	26/02/2014		4		Winter Wren	2	
Both (overlap)	25/03/2015		5		Winter Wren	3	
Both (overlap)	25/03/2015				Winter Wren	4	
Both (overlap)	25/03/2015				Winter Wren	1	
Both (overlap)	25/03/2015				Winter Wren	2	
Non-Breeding	22/10/2015	1hr 40mins starting at 07:50	2	08:57	Winter Wren	1	WS2 (mature birch willow scrub); calling. 15m from transect line
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	09:14	Winter Wren	1	WS2 (mature birch willow scrub); singing. 20m from transect line

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Non-Breeding	27/01/2016	1hr 55mins starting at 14:35	2	15:34	Winter Wren	1	PB4 (bare peat with pioneer dry grassland); flushed from grass. 0m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	10:07	Winter Wren	1	WL2 (treeline); singing. 0-25m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	10:31	Winter Wren	1	WS2 (birch willow woodland); singing. 25-100m from transect line
Non-Breeding	24/02/2016	1hr 45mins starting at 10:00	2	10:42	Winter Wren	1	WS2 (willow scrub woodland); singing. 0-25m from transect line
Both (Overlap)	31/03/2016	1hrs starting at 07:20	1	09:05	Winter Wren	1	WS1 (birch scrub): singing in trees. 0-25m from transect
Both (Overlap)	31/03/2016	2hrs starting at 08:40	2	10:10	Winter Wren	1	WS1 (birch scrub with pioneer fen mosaic): foraging in trees. 0-25m from transect
Both (Overlap)	31/03/2016	2hrs starting at 10:50	3	10:25	Winter Wren	1	WS1 (birch scrub): singing in vegetation. 25-100m from transect
Both (Overlap)	31/03/2016	1hr 55mins starting at 07:45	4	10:58	Winter Wren	1	WS2 (mature birch willow scrub): singing in scrub vegetation. 0-25m from transect
Both (Overlap)	31/03/2016			11:40	Winter Wren	1	WN7 (bog woodland): singing in trees. 25-100m from transect
Both (Overlap)	31/03/2016			11:47	Winter Wren	1	PB1 (remnant high bog): singing over tall heather. 0-25m from transect
Both (Overlap)	31/03/2016			11:57	Winter Wren	1	WL2 (treeline): singing in trees. 0-25m from transect
Both (Overlap)	31/03/2016			12:26	Winter Wren	1	WN7 (bog woodland): singing in vegetation. 0-25m from transect
Both (Overlap)	31/03/2016			12:34	Winter Wren	2	WN7 (bog woodland): singing in trees. 0-25m from transect
Both (Overlap)	31/03/2016			12:46	Winter Wren	1	PB1 (remnant high bog with young conifers): singing in vegetation. 0-25m from transect

Season	Survey Date	Survey Duration	Transect number	Time of observation	Species	Number of birds	Notes on habitat and activity
Non-Breeding	26/11/2015	1hr 50mins starting at 14:50	2a	15:17	Whooper Swan	3	PB4 (bare peat with temporary standing water); foraging on peat. 250m from transect line. See Map Ref. 028
Non-Breeding	26/11/2015	1hr 50mins starting at 14:50	2	15:46	Whooper Swan		calls of many audible to W
Non-Breeding	26/11/2015	1hr 50mins starting at 14:50	2b	15:55	Whooper Swan	43	PB4 (bare peat with pioneer dry grassland and pioneer poor fen); foraging flock including juveniles. 40m from transect line. See Map Ref. 016
Non-Breeding	01/12/2015	1hr 45mins starting at 15:00	1	15:01	Whooper Swan	45	PB4 (bare peat with temporary standing water); roosting and foraging in standing waters and adjacent grassy vegetation. 200m from transect line. See Map Ref. 016
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	09:39	Whooper Swan	4	fly over study area NE to SW - 200m from transect line
Non-Breeding	16/12/2015	1hr 16mins starting at 08:30	2	09:45	Whooper Swan	24	PB4 (bare peat with temporary standing water); 22 foraging and 2 swimming on flooded peat. Likely more that are not visible behind drains and peat stockpiles. 100m from transect line. See Map Ref. 032

Habitat codes follow Fossitt (2000) A Guide to Habitats in Ireland. Kilkenny: The Heritage Council

**Table 4 transect survey records - summer 2015 & 2016**

Season	Survey Date	Transect number	Time of observation	Species	Number of birds	Distance from transect	Habitat and Activity	Suitable breeding habitat	Breeding Status
Both (overlap)	25/03/2015	1		Common Blackbird	4				
Both (overlap)	25/03/2015	2		Common Blackbird	6				
Both (overlap)	25/03/2015	3		Common Blackbird	2				
Both (overlap)	25/03/2015	4		Common Blackbird	4				

Season	Survey Date	Transect number	Time of observation	Species	Number of birds	Distance from transect	Habitat and Activity	Suitable breeding habitat	Breeding Status
Breeding	18/04/2015	1		Common Blackbird	3				
Breeding	18/04/2015	2		Common Blackbird	4				
Breeding	18/04/2015	3		Common Blackbird	1				
Breeding	18/04/2015	4		Common Blackbird	3				
Breeding	18/04/2015	5		Common Blackbird	1				
Breeding	23/05/2015	1		Common Blackbird	3				
Breeding	23/05/2015	2		Common Blackbird	3				
Breeding	23/05/2015	3		Common Blackbird	2				
Breeding	23/05/2015	4		Common Blackbird	1				
Breeding	23/05/2015	5		Common Blackbird	4				
Breeding	30/06/2015	1		Common Blackbird	1				
Breeding	30/06/2015	2		Common Blackbird	1				
Breeding	30/06/2015	3		Common Blackbird	3				
Breeding	30/06/2015	5		Common Blackbird	2				
Both (Overlap)	31/03/2016		12:26	Common Blackbird	2	0-25m	WN7 (bog woodland): observed in woodland edge	suitable	Probable breeding (pair observed in suitable nesting habitat)
Breeding	18/04/2015	1		Blackcap	1				
Breeding	18/04/2015	3		Blackcap	1				
Breeding	23/05/2015	1		Blackcap	2				
Breeding	23/05/2015	2		Blackcap	1				
Breeding	18/04/2015	1		Bullfinch	1				
Breeding	18/04/2015	2		Bullfinch	1				
Breeding	18/04/2015	5		Bullfinch	1				
Breeding	23/05/2015	5		Bullfinch	2				
Breeding	30/06/2015	1		Bullfinch	2				
Breeding	30/06/2015	5		Bullfinch	1				

Season	Survey Date	Transect number	Time of observation	Species	Number of birds	Distance from transect	Habitat and Activity	Suitable breeding habitat	Breeding Status
Both (overlap)	25/03/2015	1		Blue tit	2				
Both (overlap)	25/03/2015	3		Blue tit	2				
Both (overlap)	25/03/2015	4		Blue tit	4				
Breeding	18/04/2015	1		Blue Tit	3				
Breeding	18/04/2015	4		Blue Tit	1				
Breeding	23/05/2015	1		Blue Tit	4				
Breeding	23/05/2015	4		Blue Tit	5				
Breeding	23/05/2015	5		Blue Tit	1				
Breeding	30/06/2015	1		Blue Tit	2				
Breeding	30/06/2015	3		Blue Tit	5				
Breeding	30/06/2015	5		Blue Tit	1				
Both (Overlap)	31/03/2016		12:26	Blue Tit	1	0-25m	WD4 (conifer plantation); WD2 (birch woodland): calls and alarming from vegetation	suitable	Possible breeder (observed in suitable nesting habitat)
<b>Breeding</b>	<b>18/04/2015</b>	<b>5</b>		<b>Common Buzzard</b>	<b>2</b>				
<b>Breeding</b>	<b>23/05/2015</b>	<b>3</b>		<b>Common Buzzard</b>	<b>2</b>				
<b>Breeding</b>	<b>23/05/2015</b>	<b>4</b>		<b>Common Buzzard</b>	<b>3</b>				
<b>Breeding</b>	<b>30/06/2015</b>	<b>1</b>		<b>Common Buzzard</b>	<b>1</b>				
<b>Breeding</b>	<b>30/06/2015</b>	<b>4</b>		<b>Common Buzzard</b>	<b>2</b>				
<b>Breeding</b>	<b>30/06/2015</b>	<b>5</b>		<b>Common Buzzard</b>	<b>1</b>				
Both (Overlap)	31/03/2016		11:14	Common Chiffchaff	1	0-25m	WN7 (bog woodland): singing in trees	suitable	Possible breeder (singing male present in suitable breeding habitat)
Both (Overlap)	31/03/2016		12:34	Common Chiffchaff	1	0-25m	WN7 (bog woodland): singing in trees	suitable	Possible breeder (singing male present in suitable breeding habitat)

Season	Survey Date	Transect number	Time of observation	Species	Number of birds	Distance from transect	Habitat and Activity	Suitable breeding habitat	Breeding Status
Breeding	18/04/2015	1		Chaffinch	5				
Breeding	18/04/2015	2		Chaffinch	3				
Breeding	18/04/2015	3		Chaffinch	3				
Breeding	18/04/2015	5		Chaffinch	2				
Breeding	23/05/2015	1		Chaffinch	4				
Breeding	23/05/2015	2		Chaffinch	2				
Breeding	23/05/2015	3		Chaffinch	1				
Breeding	23/05/2015	5		Chaffinch	1				
Breeding	30/06/2015	1		Chaffinch	1				
Breeding	30/06/2015	2		Chaffinch	3				
Breeding	30/06/2015	3		Chaffinch	2				
Breeding	30/06/2015	4		Chaffinch	3				
Breeding	30/06/2015	5		Chaffinch	2				
Both (Overlap)	31/03/2016		09:05	Chaffinch	4	0-25m	WS2 (birch woodland): calls and perched singing in trees	suitable	Probable breeding (pair observed in suitable nesting habitat)
Both (Overlap)	31/03/2016		10:10	Chaffinch	3	0-25m	WS1 (birch scrub with pioneer fen mosaic): calls and song in trees	suitable	Probable breeding (pair observed in suitable nesting habitat)
Both (Overlap)	31/03/2016		10:25	Chaffinch	3	25-100m	WS1 (birch scrub): singing and calling in trees	suitable	Probable breeding (pair observed in suitable nesting habitat)
Both (Overlap)	31/03/2016		10:35	Chaffinch	2	0-25m	WS2 (mature birch willow scrub): singing and calling in trees	suitable	Probable breeding (pair observed in suitable nesting habitat)
Both (Overlap)	31/03/2016		11:14	Chaffinch	1	25-100m	WN7 (bog woodland): singing in trees	suitable	Possible breeder (singing male present in suitable breeding habitat)

Season	Survey Date	Transect number	Time of observation	Species	Number of birds	Distance from transect	Habitat and Activity	Suitable breeding habitat	Breeding Status
Both (Overlap)	31/03/2016		11:40	Chaffinch	2	0-25m	WN7 (bog woodland): two males singing within an area of woodland	suitable	Possible breeder (singing male present in suitable breeding habitat)
Both (Overlap)	31/03/2016		11:47	Chaffinch	2	0-25m	PB1 (remnant high bog): singing over heather	unsuitable	Non-breeding (summering)
Both (Overlap)	31/03/2016		12:09	Chaffinch	4	0-25m	WN7 (bog woodland): visual of two pairs within bog woodland	suitable	Probable breeding (pair observed in suitable nesting habitat)
Breeding	23/05/2015	1		Cuckoo	1				
Both (overlap)	25/03/2015	1		Coal tit	4				
Both (overlap)	25/03/2015	3		Coal tit	1				
Both (overlap)	25/03/2015	5		Coal tit	2				
Breeding	18/04/2015	1		Coal Tit	2				
Breeding	18/04/2015	3		Coal Tit	1				
Breeding	23/05/2015	1		Coal Tit	6				
Breeding	23/05/2015	2		Coal Tit	4				
Breeding	23/05/2015	4		Coal Tit	2				
Breeding	30/06/2015	1		Coal Tit	1				
Breeding	30/06/2015	4		Coal Tit	3				
Breeding	30/06/2015	5		Coal Tit	4				
Both (Overlap)	31/03/2016		10:58	Coal Tit	1	0-25m	WS1 (birch scrub): foraging and calling on birch trees in scrub	suitable	Possible breeder (observed in suitable nesting habitat)
Both (Overlap)	31/03/2016		12:09	Coal Tit	2	0-25m	WN7 (bog woodland): visual of pair foraging within trees	suitable	Probable breeding (pair observed in suitable nesting habitat)
Both (overlap)	25/03/2015	2		Dunnock	2				
Breeding	18/04/2015	1		Dunnock	1				

Season	Survey Date	Transect number	Time of observation	Species	Number of birds	Distance from transect	Habitat and Activity	Suitable breeding habitat	Breeding Status
Breeding	18/04/2015	2		Dunnock	2				
Breeding	18/04/2015	5		Dunnock	1				
Breeding	23/05/2015	1		Dunnock	1				
Breeding	30/06/2015	2		Dunnock	1				
Breeding	30/06/2015	4		Dunnock	1				
Both (Overlap)	31/03/2016		09:05	Dunnock	1	0-25m	WS2 (birch woodland): singing in trees	suitable	Possible breeder (singing male present in suitable breeding habitat)
Both (Overlap)	31/03/2016		10:58	Dunnock	1	0-25m	WS1 (birch scrub): singing in scrub vegetation	suitable	Possible breeder (singing male present in suitable breeding habitat)
Both (Overlap)	31/03/2016		11:14	Dunnock	1	25-100m	WN7 (bog woodland): singing in trees	suitable	Possible breeder (singing male present in suitable breeding habitat)
Both (Overlap)	31/03/2016		11:57	Dunnock	1	0-25m	WL2 (treeline): singing in trees	suitable	Possible breeder (singing male present in suitable breeding habitat)
Both (overlap)	25/03/2015	2		Goldcrest	2				
Both (overlap)	25/03/2015	3		Goldcrest	1				
Breeding	18/04/2015	1		Goldcrest	1				
Breeding	18/04/2015	2		Goldcrest	2				
Breeding	18/04/2015	3		Goldcrest	2				
Breeding	23/05/2015	1		Goldcrest	3				
Breeding	23/05/2015	4		Goldcrest	4				
Breeding	30/06/2015	2		Goldcrest	1				

Season	Survey Date	Transect number	Time of observation	Species	Number of birds	Distance from transect	Habitat and Activity	Suitable breeding habitat	Breeding Status
Breeding	30/06/2015	3		Goldcrest	1				
Breeding	18/04/2015	1		European Goldfinch	3				
Breeding	18/04/2015	4		European Goldfinch	5				
Breeding	23/05/2015	1		European Goldfinch	2				
Breeding	23/05/2015	3		European Goldfinch	5				
Breeding	30/06/2015	2		European Goldfinch	4				
Breeding	30/06/2015	4		European Goldfinch	2				
Both (Overlap)	31/03/2016		11:14	European Greenfinch	1	0-25m	PB1 (remnant high bog): flies over heather	unsuitable	Non-breeding (flying over)
Both (overlap)	25/03/2015	1		Great Tit	1				
Both (overlap)	25/03/2015	2		Great Tit	1				
Breeding	18/04/2015	1		Great Tit	1				
Breeding	18/04/2015	2		Great Tit	2				
Breeding	18/04/2015	4		Great Tit	1				
Breeding	23/05/2015	4		Great Tit	4				
Breeding	30/06/2015	1		Great Tit	1				
Breeding	30/06/2015	2		Great Tit	1				
Both (Overlap)	31/03/2016		10:58	Great Tit	1	25-100m	WS2 (mature birch willow scrub): singing in trees	suitable	Possible breeder (singing male present in suitable breeding habitat)
<b>Breeding</b>	<b>18/04/2015</b>	<b>1</b>		<b>Grey Heron</b>	<b>1</b>				
<b>Breeding</b>	<b>23/05/2015</b>	<b>3</b>		<b>Grey Heron</b>	<b>1</b>				
<b>Breeding</b>	<b>30/06/2015</b>	<b>1</b>		<b>Grey Heron</b>	<b>1</b>				
<b>Both (overlap)</b>	<b>25/03/2015</b>	<b>1</b>		<b>Grey Heron</b>	<b>1</b>				
<b>Both (overlap)</b>	<b>25/03/2015</b>	<b>5</b>		<b>Grey Heron</b>	<b>1</b>				
Both (overlap)	25/03/2015	1		Hooded Crow	2				

Season	Survey Date	Transect number	Time of observation	Species	Number of birds	Distance from transect	Habitat and Activity	Suitable breeding habitat	Breeding Status
Both (overlap)	25/03/2015	5		Hooded Crow	3				
Breeding	18/04/2015	1		Hooded Crow	4				
Breeding	23/05/2015	1		Hooded Crow	2				
Breeding	23/05/2015	2		Hooded Crow	1				
Breeding	30/06/2015	1		Hooded Crow	3				
Breeding	30/06/2015	4		Hooded Crow	2				
Both (Overlap)	31/03/2016		09:30	Hooded Crow	4	0-25m	PB4 (bare peat): fly over transect	unsuitable	Non-breeding (flying over)
Both (Overlap)	31/03/2016		09:40	Hooded Crow	2	0-25m	PB4 (bare peat): fly over transect	unsuitable	Non-breeding (summering)
Both (Overlap)	31/03/2016		11:14	Hooded Crow	1	0-25m	PB4 (bare peat): flies over bare peat	unsuitable	Non-breeding (flying over)
Both (overlap)	25/03/2015	1		Jay	2				
Breeding	18/04/2015	1		Jay	1				
Breeding	23/05/2015	1		Jay	2				
Both (overlap)	25/03/2015	2		Jackdaw	4				
Breeding	18/04/2015	2		Jackdaw	1				
<b>Both (overlap)</b>	<b>25/03/2015</b>	<b>4</b>		<b>Common Kestrel</b>	<b>1</b>				
<b>Breeding</b>	<b>18/04/2015</b>	<b>1</b>		<b>Common Kestrel</b>	<b>1</b>				
<b>Breeding</b>	<b>30/06/2015</b>	<b>2</b>		<b>Common Kestrel</b>	<b>1</b>				
<b>Breeding</b>	<b>30/06/2015</b>	<b>3</b>		<b>Common Kestrel</b>	<b>1</b>				
<b>Both (Overlap)</b>	<b>31/03/2016</b>		<b>11:14</b>	<b>Common Kestrel</b>	<b>1</b>	<b>0-25m</b>	<b>PB4 (bare peat); PB1 (remnant high bog): flies over, commuting</b>	<b>unsuitable</b>	<b>Non-breeding (flying over)</b>
<b>Both (overlap)</b>	<b>25/03/2015</b>	<b>1</b>		<b>Northern Lapwing</b>	<b>2</b>				
<b>Breeding</b>	<b>18/04/2015</b>	<b>1</b>		<b>Northern Lapwing</b>	<b>3</b>				
<b>Breeding</b>	<b>23/05/2015</b>	<b>1</b>		<b>Northern Lapwing</b>	<b>4</b>				

Season	Survey Date	Transect number	Time of observation	Species	Number of birds	Distance from transect	Habitat and Activity	Suitable breeding habitat	Breeding Status
Both (Overlap)	31/03/2016		12:26	Northern Lapwing	1	100<m	PB4 (bare peat and pioneer poor fen); WS2 (mature birch willow scrub): display flight and calls	suitable	Possible breeder (observed in suitable nesting habitat)
Both (Overlap)	31/03/2016		12:34	Northern Lapwing	9	100<m	PB4 (bare peat and pioneer poor fen); WS2 (mature birch willow scrub): display dance and calls over bog	suitable	Probable breeding (courtship and display)
Breeding	18/04/2015	3		Linnet	2				
Breeding	23/05/2015	2		Linnet	4				
Breeding	23/05/2015	3		Linnet	1				
Breeding	30/06/2015	1		Linnet	1				
Breeding	30/06/2015	2		Linnet	5				
Breeding	18/04/2015	1		Lesser Redpoll	6				
Breeding	18/04/2015	4		Lesser Redpoll	4				
Breeding	18/04/2015	5		Lesser Redpoll	2				
Breeding	23/05/2015	1		Lesser Redpoll	2				
Breeding	23/05/2015	4		Lesser Redpoll	2				
Breeding	30/06/2015	4		Lesser Redpoll	5				
Both (Overlap)	31/03/2016		09:05	Lesser Redpoll	3	0-25m	WS2 (birch woodland): perched in trees and foraging	suitable	Probable breeding (pair observed in suitable nesting habitat)
Both (Overlap)	31/03/2016		11:57	Lesser Redpoll	1	0-25m	WL2 (treeline with pioneer Molinia): calling from grass	unsuitable	Non-breeding (summering)
Both (Overlap)	31/03/2016		12:09	Lesser Redpoll	2	0-25m	WN7 (bog woodland): calls from trees	unsuitable	Non-breeding (summering)
Both (Overlap)	31/03/2016		12:26	Lesser Redpoll	1	0-25m	WN7 (bog woodland): calls from thick vegetation	unsuitable	Non-breeding (summering)
Both (Overlap)	31/03/2016		12:46	Lesser Redpoll	2	0-25m	PB1 (remnant high bog): calling	unsuitable	Non-breeding (summering)
Both (overlap)	25/03/2015	2		Long-tailed Tit	6				

Season	Survey Date	Transect number	Time of observation	Species	Number of birds	Distance from transect	Habitat and Activity	Suitable breeding habitat	Breeding Status
Both (Overlap)	31/03/2016		10:10	Long-tailed Tit	3	0-25m	WS1 (birch scrub with pioneer fen mosaic): foraging and calling to one another in trees	suitable	Probable breeding (pair observed in suitable nesting habitat)
Both (Overlap)	31/03/2016		12:09	Long-tailed Tit	1	0-25m	WN7 (bog woodland): calls from trees	suitable	Possible breeder (observed in suitable nesting habitat)
<b>Both (overlap)</b>	<b>25/03/2015</b>	<b>1</b>		<b>Mallard</b>	<b>4</b>				
<b>Both (overlap)</b>	<b>25/03/2015</b>	<b>3</b>		<b>Mallard</b>	<b>1</b>				
<b>Breeding</b>	<b>18/04/2015</b>	<b>1</b>		<b>Mallard</b>	<b>3</b>				
<b>Breeding</b>	<b>18/04/2015</b>	<b>2</b>		<b>Mallard</b>	<b>2</b>				
<b>Breeding</b>	<b>18/04/2015</b>	<b>3</b>		<b>Mallard</b>	<b>2</b>				
<b>Breeding</b>	<b>23/05/2015</b>	<b>1</b>		<b>Mallard</b>	<b>2</b>				
<b>Breeding</b>	<b>23/05/2015</b>	<b>5</b>		<b>Mallard</b>	<b>1</b>				
<b>Breeding</b>	<b>30/06/2015</b>	<b>1</b>		<b>Mallard</b>	<b>3</b>				
<b>Breeding</b>	<b>30/06/2015</b>	<b>3</b>		<b>Mallard</b>	<b>2</b>				
<b>Both (Overlap)</b>	<b>31/03/2016</b>		<b>12:34</b>	<b>Mallard</b>	<b>2</b>	<b>0-25m</b>	<b>PB4 (bare peat); WS1 (birch scrub): fly over transect and bare peat</b>	<b>unsuitable</b>	<b>Non-breeding (flying over)</b>
Both (overlap)	25/03/2015	1		Magpie	1				
Both (overlap)	25/03/2015	3		Magpie	2				
Both (overlap)	25/03/2015	5		Magpie	1				
Breeding	18/04/2015	1		Magpie	2				
Breeding	18/04/2015	3		Magpie	1				
Breeding	23/05/2015	1		Magpie	3				
Breeding	23/05/2015	2		Magpie	1				
Breeding	23/05/2015	4		Magpie	2				
Breeding	30/06/2015	1		Magpie	1				

Season	Survey Date	Transect number	Time of observation	Species	Number of birds	Distance from transect	Habitat and Activity	Suitable breeding habitat	Breeding Status
Breeding	30/06/2015	4		Magpie	4				
Breeding	30/06/2015	2		Magpie	2				
<b>Both (overlap)</b>	<b>25/03/2015</b>	<b>1</b>		<b>Common Moorhen</b>	<b>2</b>				
<b>Both (overlap)</b>	<b>25/03/2015</b>	<b>2</b>		<b>Common Moorhen</b>	<b>1</b>				
<b>Both (overlap)</b>	<b>25/03/2015</b>	<b>3</b>		<b>Common Moorhen</b>	<b>1</b>				
<b>Both (overlap)</b>	<b>25/03/2015</b>	<b>5</b>		<b>Common Moorhen</b>	<b>1</b>				
<b>Breeding</b>	<b>18/04/2015</b>	<b>1</b>		<b>Common Moorhen</b>	<b>2</b>				
<b>Breeding</b>	<b>18/04/2015</b>	<b>2</b>		<b>Common Moorhen</b>	<b>1</b>				
<b>Breeding</b>	<b>18/04/2015</b>	<b>3</b>		<b>Common Moorhen</b>	<b>2</b>				
<b>Breeding</b>	<b>23/05/2015</b>	<b>1</b>		<b>Common Moorhen</b>	<b>1</b>				
<b>Breeding</b>	<b>23/05/2015</b>	<b>3</b>		<b>Common Moorhen</b>	<b>1</b>				
<b>Breeding</b>	<b>30/06/2015</b>	<b>3</b>		<b>Common Moorhen</b>	<b>2</b>				
<b>Breeding</b>	<b>30/06/2015</b>	<b>5</b>		<b>Common Moorhen</b>	<b>1</b>				
Both (overlap)	25/03/2015	1		Meadow pipit	6				
Both (overlap)	25/03/2015	2		Meadow pipit	7				
Both (overlap)	25/03/2015	3		Meadow pipit	3				
Both (overlap)	25/03/2015	4		Meadow pipit	5				
Both (overlap)	25/03/2015	5		Meadow pipit	3				
Breeding	18/04/2015	1		Meadow pipit	8				
Breeding	18/04/2015	2		Meadow pipit	5				
Breeding	18/04/2015	3		Meadow pipit	2				
Breeding	18/04/2015	4		Meadow pipit	7				
Breeding	18/04/2015	5		Meadow pipit	6				
Breeding	23/05/2015	1		Meadow pipit	8				
Breeding	23/05/2015	2		Meadow pipit	4				

Season	Survey Date	Transect number	Time of observation	Species	Number of birds	Distance from transect	Habitat and Activity	Suitable breeding habitat	Breeding Status
Breeding	23/05/2015	3		Meadow pipit	2				
Breeding	23/05/2015	4		Meadow pipit	4				
Breeding	23/05/2015	5		Meadow pipit	5				
Breeding	30/06/2015	1		Meadow pipit	13				
Breeding	30/06/2015	2		Meadow pipit	6				
Breeding	30/06/2015	3		Meadow pipit	5				
Breeding	30/06/2015	4		Meadow pipit	6				
Breeding	30/06/2015	5		Meadow pipit	3				
Both (Overlap)	31/03/2016		08:58	Meadow Pipit	3	0-25m	PB4 (bare peat with pioneer poor fen): perched among grasses, then begins singing and a display flight	unsuitable	Non-breeding (summering)
Both (Overlap)	31/03/2016		09:05	Meadow Pipit	7	0-25m	PB4 (bare peat): perching on peat, singing and calling to one another	unsuitable	Non-breeding (summering)
Both (Overlap)	31/03/2016		09:30	Meadow Pipit	1	0-25m	PB4 (bare peat): fly over transect	unsuitable	Non-breeding (flying over)
Both (Overlap)	31/03/2016		09:40	Meadow Pipit	2	0-25m	PB4 (bare peat): perching on bare peat and flying	unsuitable	Non-breeding (summering)
Both (Overlap)	31/03/2016		11:40	Meadow Pipit	1	0-25m	PB4 (bare peat): fly over bare peat	unsuitable	Non-breeding (flying over)
Both (Overlap)	31/03/2016		11:47	Meadow Pipit	1	0-25m	PB4 (bare peat): fly over bare peat	unsuitable	Non-breeding (summering)
Both (Overlap)	31/03/2016		12:46	Meadow Pipit	1	0-25m	PB1 (remnant high bog with young conifers): calling and flying around vegetation	suitable	Possible breeder (observed in suitable nesting habitat)
<b>Both (overlap)</b>	<b>25/03/2015</b>	<b>1</b>		<b>Mute Swan</b>	<b>1</b>				
<b>Both (overlap)</b>	<b>25/03/2015</b>	<b>5</b>		<b>Mute Swan</b>	<b>2</b>				
Both (overlap)	25/03/2015	1		Mistle thrush	4				
Both (overlap)	25/03/2015	5		Mistle thrush	2				

Season	Survey Date	Transect number	Time of observation	Species	Number of birds	Distance from transect	Habitat and Activity	Suitable breeding habitat	Breeding Status
Breeding	23/05/2015	1		Mistle thrush	2				
Breeding	30/06/2015	1		Mistle thrush	5				
Both (Overlap)	31/03/2016		10:25	Mistle thrush	1	100<m	WS2 (mature birch willow scrub): singing in treeline to north	suitable	Possible breeder (observed in suitable nesting habitat)
Both (Overlap)	31/03/2016		10:58	Mistle thrush	1	25-100m	WS2 (mature birch willow scrub): singing in trees	suitable	Possible breeder (singing male present in suitable breeding habitat)
Both (overlap)	25/03/2015	1		Common Pheasant	2				
Both (overlap)	25/03/2015	3		Common Pheasant	1				
Both (overlap)	25/03/2015	4		Common Pheasant	1				
Both (overlap)	25/03/2015	5		Common Pheasant	1				
Breeding	18/04/2015	1		Common Pheasant	1				
Breeding	18/04/2015	2		Common Pheasant	2				
Breeding	18/04/2015	4		Common Pheasant	1				
Breeding	23/05/2015	2		Common Pheasant	1				
Breeding	23/05/2015	5		Common Pheasant	2				
Breeding	30/06/2015	1		Common Pheasant	1				
Breeding	30/06/2015	2		Common Pheasant	1				
Breeding	30/06/2015	4		Common Pheasant	2				
Both (Overlap)	31/03/2016		10:25	Common Pheasant	1	100<m	habitat not identified: calling in vegetation	NA	Non-breeding (summering)
Both (overlap)	25/03/2015	1		Pied Wagtail	3				
Both (overlap)	25/03/2015	2		Pied Wagtail	2				
Both (overlap)	25/03/2015	3		Pied Wagtail	1				
Breeding	18/04/2015	1		Pied Wagtail	2				
Breeding	18/04/2015	2		Pied Wagtail	2				

Season	Survey Date	Transect number	Time of observation	Species	Number of birds	Distance from transect	Habitat and Activity	Suitable breeding habitat	Breeding Status
Breeding	23/05/2015	1		Pied Wagtail	3				
Breeding	23/05/2015	3		Pied Wagtail	2				
Breeding	30/06/2015	3		Pied Wagtail	1				
Both (overlap)	25/03/2015	1		European Robin	2				
Both (overlap)	25/03/2015	2		European Robin	3				
Both (overlap)	25/03/2015	3		European Robin	2				
Both (overlap)	25/03/2015	4		European Robin	3				
Both (overlap)	25/03/2015	5		European Robin	3				
Breeding	18/04/2015	1		European Robin	4				
Breeding	18/04/2015	2		European Robin	2				
Breeding	18/04/2015	3		European Robin	2				
Breeding	18/04/2015	4		European Robin	1				
Breeding	18/04/2015	5		European Robin	2				
Breeding	23/05/2015	1		European Robin	2				
Breeding	23/05/2015	2		European Robin	1				
Breeding	23/05/2015	3		European Robin	3				
Breeding	23/05/2015	4		European Robin	1				
Breeding	23/05/2015	5		European Robin	1				
Breeding	30/06/2015	1		European Robin	3				
Breeding	30/06/2015	2		European Robin	3				
Breeding	30/06/2015	3		European Robin	1				
Breeding	30/06/2015	4		European Robin	2				
Breeding	30/06/2015	5		European Robin	4				
Both (Overlap)	31/03/2016		09:05	European Robin	1	0-25m	WS2 (birch woodland): singing in trees	suitable	Possible breeder (singing male present in suitable breeding habitat)

Season	Survey Date	Transect number	Time of observation	Species	Number of birds	Distance from transect	Habitat and Activity	Suitable breeding habitat	Breeding Status
Both (Overlap)	31/03/2016		10:25	European Robin	2	25-100m	WS1 (birch scrub): singing in vegetation	suitable	Possible breeder (singing male present in suitable breeding habitat)
Both (Overlap)	31/03/2016		10:58	European Robin	2	0-25m	WS1 (birch scrub): singing and foraging in scrub	suitable	Probable breeding (pair observed in suitable nesting habitat)
Both (Overlap)	31/03/2016		11:14	European Robin	1	25-100m	WN7 (bog woodland): singing in trees	suitable	Possible breeder (singing male present in suitable breeding habitat)
Both (Overlap)	31/03/2016		11:57	European Robin	1	0-25m	WL2 (treeline with pioneer Molinia): singing in trees	suitable	Possible breeder (singing male present in suitable breeding habitat)
Both (Overlap)	31/03/2016		12:09	European Robin	2	0-25m	WN7 (bog woodland): two males audible singing in area of woodland	suitable	Possible breeder (singing male present in suitable breeding habitat)
Both (Overlap)	31/03/2016		12:26	European Robin	1	0-25m	WD4 (conifer plantation); WS2 (birch woodland): singing in vegetation	suitable	Possible breeder (singing male present in suitable breeding habitat)
Both (overlap)	25/03/2015	1		Reed Bunting	1				
Both (overlap)	25/03/2015	2		Reed Bunting	1				
Breeding	18/04/2015	1		Reed Bunting	2				
Breeding	18/04/2015	5		Reed Bunting	1				
Breeding	23/05/2015	1		Reed Bunting	3				
Breeding	23/05/2015	3		Reed Bunting	1				
Breeding	23/05/2015	5		Reed Bunting	2				
Breeding	30/06/2015	1		Reed Bunting	1				

Season	Survey Date	Transect number	Time of observation	Species	Number of birds	Distance from transect	Habitat and Activity	Suitable breeding habitat	Breeding Status
Breeding	30/06/2015	2		Reed Bunting	2				
Both (Overlap)	31/03/2016		09:05	Reed Bunting	2	0-25m	WS2 (birch woodland): perched and foraging	suitable	Probable breeding (pair observed in suitable nesting habitat)
Both (Overlap)	31/03/2016		10:10	Reed Bunting	1	0-25m	WS1 (birch scrub with pioneer fen mosaic): perched in tree roosting	suitable	Possible breeder (observed in suitable nesting habitat)
Both (overlap)	25/03/2015	3		Raven	3				
Both (Overlap)	31/03/2016		10:25	Rook	1	0-25m	WS1 (birch scrub): fly over transect	unsuitable	Non-breeding (flying over)
Both (Overlap)	31/03/2016		11:14	Rook	1	0-25m	PB4 (bare peat): flies over bare peat	unsuitable	Non-breeding (flying over)
<b>Breeding</b>	<b>18/04/2015</b>	<b>1</b>		<b>Ringed Plover</b>	<b>1</b>				
<b>Breeding</b>	<b>23/05/2015</b>	<b>1</b>		<b>Ringed Plover</b>	<b>2</b>				
<b>Both (Overlap)</b>	<b>31/03/2016</b>		<b>08:58</b>	<b>Ringed Plover</b>	<b>2</b>	<b>0-25m</b>	<b>PB4 (bare peat with pioneer poor fen): foraging around flooded bare peat and poor fen</b>	<b>suitable</b>	<b>Probable breeding (pair observed in suitable nesting habitat). See Map Ref. 012</b>
Both (overlap)	25/03/2015	1		Sky Lark	3				
Both (overlap)	25/03/2015	2		Sky Lark	2				
Both (overlap)	25/03/2015	3		Sky Lark	1				
Both (overlap)	25/03/2015	4		Sky Lark	3				
Both (overlap)	25/03/2015	5		Sky Lark	2				
Breeding	18/04/2015	1		Sky Lark	5				
Breeding	18/04/2015	2		Sky Lark	3				
Breeding	18/04/2015	4		Sky Lark	4				
Breeding	18/04/2015	5		Sky Lark	5				
Breeding	23/05/2015	1		Sky Lark	4				

Season	Survey Date	Transect number	Time of observation	Species	Number of birds	Distance from transect	Habitat and Activity	Suitable breeding habitat	Breeding Status
Breeding	23/05/2015	2		Sky Lark	1				
Breeding	23/05/2015	4		Sky Lark	5				
Breeding	23/05/2015	5		Sky Lark	6				
Breeding	30/06/2015	1		Sky Lark	6				
Breeding	30/06/2015	2		Sky Lark	3				
Breeding	30/06/2015	3		Sky Lark	1				
Breeding	30/06/2015	4		Sky Lark	4				
Breeding	30/06/2015	5		Sky Lark	2				
Both (Overlap)	31/03/2016		09:05	Sky Lark	5	0-25m	WS2 (birch woodland); PB4 (bare peat and pioneer poor fen): singing and displaying	suitable	Probable breeding (pair observed in suitable nesting habitat)
Both (Overlap)	31/03/2016		09:40	Sky Lark	3	0-25m	PB4 (bare peat): singing and display flights over bare peat	unsuitable	Non-breeding (summering)
Both (Overlap)	31/03/2016		09:54	Sky Lark	10+	0-25m	PB4 (bare peat with pioneer poor fen): large flock, singing and display flights, perching and chasing	suitable	Probable breeding (pair observed in suitable nesting habitat)
Both (Overlap)	31/03/2016		10:10	Sky Lark	2	0-25m	WS1 (birch scrub with pioneer fen mosaic): foraging in grass and singing	suitable	Probable breeding (pair observed in suitable nesting habitat)
Both (Overlap)	31/03/2016		12:09	Sky Lark	1	0-25m	GS2 (dry grassland in riparian area): singing and display song	suitable	Possible breeder (singing male present in suitable breeding habitat)
Both (Overlap)	31/03/2016		12:26	Sky Lark	1	0-25m	PB4 (bare peat): singing over bare peat	unsuitable	Non-breeding (summering)
Both (overlap)	25/03/2015	1		Stonechat	2				
Both (overlap)	25/03/2015	3		Stonechat	2				
Both (overlap)	25/03/2015	5		Stonechat	2				
Breeding	18/04/2015	1		Stonechat	1				

Season	Survey Date	Transect number	Time of observation	Species	Number of birds	Distance from transect	Habitat and Activity	Suitable breeding habitat	Breeding Status
Breeding	18/04/2015	3		Stonechat	2				
Breeding	23/05/2015	1		Stonechat	4				
Breeding	23/05/2015	3		Stonechat	2				
Breeding	30/06/2015	1		Stonechat	3				
Breeding	30/06/2015	3		Stonechat	4				
Both (Overlap)	31/03/2016		10:10	Stonechat	1	0-25m	WS1 (birch scrub with pioneer fen mosaic): calls audible	unsuitable	Non-breeding (summering)
<b>Both (overlap)</b>	<b>25/03/2015</b>	<b>1</b>		<b>Eurasian Sparrowhawk</b>	<b>1</b>				
<b>Both (overlap)</b>	<b>25/03/2015</b>	<b>4</b>		<b>Eurasian Sparrowhawk</b>	<b>1</b>				
<b>Breeding</b>	<b>18/04/2015</b>	<b>1</b>		<b>Eurasian Sparrowhawk</b>	<b>2</b>				
<b>Breeding</b>	<b>18/04/2015</b>	<b>2</b>		<b>Eurasian Sparrowhawk</b>	<b>1</b>				
<b>Breeding</b>	<b>23/05/2015</b>	<b>1</b>		<b>Eurasian Sparrowhawk</b>	<b>1</b>				
<b>Breeding</b>	<b>30/06/2015</b>	<b>1</b>		<b>Eurasian Sparrowhawk</b>	<b>2</b>				
<b>Breeding</b>	<b>30/06/2015</b>	<b>5</b>		<b>Eurasian Sparrowhawk</b>	<b>1</b>				
Breeding	18/04/2015	1		Barn Swallow	3				
Breeding	18/04/2015	3		Barn Swallow	4				
Breeding	18/04/2015	4		Barn Swallow	5				
Breeding	18/04/2015	5		Barn Swallow	1				
Breeding	23/05/2015	1		Barn Swallow	6				
Breeding	23/05/2015	2		Barn Swallow	2				
Breeding	23/05/2015	3		Barn Swallow	12				
Breeding	23/05/2015	4		Barn Swallow	8				
Breeding	23/05/2015	5		Barn Swallow	3				
Breeding	30/06/2015	1		Barn Swallow	10				

Season	Survey Date	Transect number	Time of observation	Species	Number of birds	Distance from transect	Habitat and Activity	Suitable breeding habitat	Breeding Status
Breeding	30/06/2015	3		Barn Swallow	6				
Breeding	30/06/2015	4		Barn Swallow	2				
Breeding	18/04/2015	2		Sand Martin	20+				
Breeding	18/04/2015	5		Sand Martin	4				
Breeding	23/05/2015	1		Sand Martin	7				
Breeding	23/05/2015	1		Sand Martin	60+				
Breeding	30/06/2015	2		Sand Martin	80+				
<b>Both (overlap)</b>	<b>25/03/2015</b>	<b>1</b>		<b>Common Snipe</b>	<b>2</b>				
<b>Both (overlap)</b>	<b>25/03/2015</b>	<b>4</b>		<b>Common Snipe</b>	<b>1</b>				
<b>Both (overlap)</b>	<b>25/03/2015</b>	<b>5</b>		<b>Common Snipe</b>	<b>6</b>				
<b>Both (overlap)</b>	<b>25/03/2015</b>	<b>5</b>		<b>Common Snipe</b>	<b>6</b>				
<b>Breeding</b>	<b>18/04/2015</b>	<b>1</b>		<b>Common Snipe</b>	<b>1</b>				
<b>Breeding</b>	<b>23/05/2015</b>	<b>1</b>		<b>Common Snipe</b>	<b>1</b>				
<b>Breeding</b>	<b>23/05/2015</b>	<b>5</b>		<b>Common Snipe</b>	<b>1</b>				
<b>Breeding</b>	<b>30/06/2015</b>	<b>1</b>		<b>Common Snipe</b>	<b>1</b>				
<b>Breeding</b>	<b>30/06/2015</b>	<b>5</b>		<b>Common Snipe</b>	<b>1</b>				
<b>Both (Overlap)</b>	<b>31/03/2016</b>		<b>11:40</b>	<b>Common Snipe</b>	<b>1</b>	<b>0-25m</b>	<b>FW4 (drainage ditch): flushed from drain</b>	<b>unsuitable</b>	<b>Non-breeding (summering)</b>
Both (overlap)	25/03/2015	1		Song Thrush	2				
Both (overlap)	25/03/2015	2		Song Thrush	2				
Both (overlap)	25/03/2015	3		Song Thrush	1				
Breeding	18/04/2015	1		Song Thrush	2				
Breeding	18/04/2015	2		Song Thrush	1				
Breeding	18/04/2015	4		Song Thrush	1				
Breeding	23/05/2015	1		Song Thrush	1				

Season	Survey Date	Transect number	Time of observation	Species	Number of birds	Distance from transect	Habitat and Activity	Suitable breeding habitat	Breeding Status
Breeding	23/05/2015	3		Song Thrush	1				
Breeding	23/05/2015	4		Song Thrush	2				
Breeding	30/06/2015	1		Song Thrush	2				
Breeding	30/06/2015	2		Song Thrush	1				
Breeding	30/06/2015	4		Song Thrush	1				
Breeding	30/06/2015	5		Song Thrush	2				
Both (Overlap)	31/03/2016		10:10	Song Thrush	1	0-25m	WS1 (birch scrub with pioneer fen mosaic): singing in sparse vegetation	unsuitable	Non-breeding (summering)
Both (Overlap)	31/03/2016		12:09	Song Thrush	1	0-25m	WN7 (bog woodland): singing in trees	suitable	Possible breeder (singing male present in suitable breeding habitat)
Breeding	18/04/2015	1		Sedge Warbler	2				
Breeding	18/04/2015	2		Sedge Warbler	1				
Breeding	23/05/2015	1		Sedge Warbler	1				
Breeding	23/05/2015	2		Sedge Warbler	2				
Breeding	23/05/2015	3		Sedge Warbler	1				
Both (overlap)	25/03/2015	3		Wheatear	1				
Breeding	18/04/2015	3		Wheatear	1				
Breeding	23/05/2015	1		Whitethroat	2				
Breeding	23/05/2015	2		Whitethroat	2				
Breeding	23/05/2015	4		Whitethroat	1				
Breeding	30/06/2015	1		Whitethroat	3				
Breeding	30/06/2015	2		Whitethroat	1				
Breeding	30/06/2015	4		Whitethroat	2				
Breeding	30/06/2015	5		Whitethroat	1				
Both (overlap)	25/03/2015	1		Common Wood Pigeon	3				

Season	Survey Date	Transect number	Time of observation	Species	Number of birds	Distance from transect	Habitat and Activity	Suitable breeding habitat	Breeding Status
Both (overlap)	25/03/2015	2		Common Wood Pigeon	2				
Both (overlap)	25/03/2015	5		Common Wood Pigeon	4				
Breeding	18/04/2015	1		Common Woodpigeon	7				
Breeding	18/04/2015	2		Common Woodpigeon	4				
Breeding	18/04/2015	3		Common Woodpigeon	2				
Breeding	18/04/2015	4		Common Woodpigeon	3				
Breeding	23/05/2015	1		Common Woodpigeon	2				
Breeding	23/05/2015	2		Common Woodpigeon	5				
Breeding	23/05/2015	4		Common Woodpigeon	1				
Breeding	23/05/2015	5		Common Woodpigeon	2				
Breeding	30/06/2015	1		Common Woodpigeon	4				
Breeding	30/06/2015	2		Common Woodpigeon	2				
Breeding	30/06/2015	3		Common Woodpigeon	6				
Breeding	30/06/2015	5		Common Woodpigeon	4				
Both (Overlap)	31/03/2016		10:58	Common Wood Pigeon	1	25-100m	WS2 (mature birch willow scrub): perched in tree	unsuitable	Non-breeding (summering)
Both (Overlap)	31/03/2016		12:26	Common Wood Pigeon	1	0-25m	WD4 (conifer plantation); PB4 (bare peat): flushed from conifers and leaves calling	suitable	Possible breeder (observed in suitable nesting habitat)
Both (Overlap)	31/03/2016		12:34	Common Wood Pigeon	1	0-25m	WN7 (bog woodland): perched in trees calling	suitable	Possible breeder (observed in suitable nesting habitat)
<b>Both (overlap)</b>	<b>31/03/2016</b>	<b>4</b>	<b>09:01</b>	<b>Water Rail</b>	<b>2+</b>	<b>0-25m</b>	<b>fen and swamp and pioneer reedbeds inundated with surface water. Multiple calls and songs heard from suitable breeding habitat indicating more than one individual present - See Map Ref. 031</b>	<b>suitable</b>	<b>Probable breeder (displaying)</b>
Both (overlap)	25/03/2015	1		Winter Wren	3				

Season	Survey Date	Transect number	Time of observation	Species	Number of birds	Distance from transect	Habitat and Activity	Suitable breeding habitat	Breeding Status
Both (overlap)	25/03/2015	2		Winter Wren	4				
Both (overlap)	25/03/2015	3		Winter Wren	1				
Both (overlap)	25/03/2015	4		Winter Wren	2				
Breeding	18/04/2015	1		Winter Wren	6				
Breeding	18/04/2015	2		Winter Wren	5				
Breeding	18/04/2015	3		Winter Wren	2				
Breeding	18/04/2015	4		Winter Wren	3				
Breeding	18/04/2015	5		Winter Wren	2				
Breeding	23/05/2015	1		Winter Wren	3				
Breeding	23/05/2015	2		Winter Wren	2				
Breeding	23/05/2015	3		Winter Wren	4				
Breeding	23/05/2015	4		Winter Wren	2				
Breeding	23/05/2015	5		Winter Wren	3				
Breeding	30/06/2015	1		Winter Wren	5				
Breeding	30/06/2015	2		Winter Wren	2				
Breeding	30/06/2015	3		Winter Wren	1				
Breeding	30/06/2015	4		Winter Wren	4				
Breeding	30/06/2015	5		Winter Wren	3				
Both (Overlap)	31/03/2016		09:05	Winter Wren	1	0-25m	WS1 (birch scrub): singing in trees	suitable	Possible breeder (singing male present in suitable breeding habitat)
Both (Overlap)	31/03/2016		10:10	Winter Wren	1	0-25m	WS1 (birch scrub with pioneer fen mosaic): foraging in trees	suitable	Possible breeder (observed in suitable nesting habitat)
Both (Overlap)	31/03/2016		10:25	Winter Wren	1	25-100m	WS1 (birch scrub): singing in vegetation	suitable	Possible breeder (singing male present in suitable breeding

Season	Survey Date	Transect number	Time of observation	Species	Number of birds	Distance from transect	Habitat and Activity	Suitable breeding habitat	Breeding Status
									habitat]
Both (Overlap)	31/03/2016		10:58	Winter Wren	1	0-25m	WS2 (mature birch willow scrub): singing in scrub vegetation	suitable	Possible breeder (singing male present in suitable breeding habitat)
Both (Overlap)	31/03/2016		11:40	Winter Wren	1	25-100m	WN7 (bog woodland): singing in trees	suitable	Possible breeder (singing male present in suitable breeding habitat)
Both (Overlap)	31/03/2016		11:47	Winter Wren	1	0-25m	PB1 (remnant high bog): singing over tall heather	suitable	Possible breeder (singing male present in suitable breeding habitat)
Both (Overlap)	31/03/2016		11:57	Winter Wren	1	0-25m	WL2 (treeline): singing in trees	suitable	Possible breeder (singing male present in suitable breeding habitat)
Both (Overlap)	31/03/2016		12:26	Winter Wren	1	0-25m	WN7 (bog woodland): singing in vegetation	suitable	Possible breeder (singing male present in suitable breeding habitat)
Both (Overlap)	31/03/2016		12:34	Winter Wren	2	0-25m	WN7 (bog woodland): singing in trees	suitable	Possible breeder (singing male present in suitable breeding habitat)
Both (Overlap)	31/03/2016		12:46	Winter Wren	1	0-25m	PB1 (remnant high bog with young conifers): singing in vegetation	suitable	Possible breeder (singing male present in suitable breeding habitat)
Breeding	18/04/2015	1		Willow Warbler	2				
Breeding	18/04/2015	2		Willow Warbler	3				

Season	Survey Date	Transect number	Time of observation	Species	Number of birds	Distance from transect	Habitat and Activity	Suitable breeding habitat	Breeding Status
Breeding	18/04/2015	3		Willow Warbler	2				
Breeding	18/04/2015	4		Willow Warbler	3				
Breeding	18/04/2015	5		Willow Warbler	2				
Breeding	23/05/2015	1		Willow Warbler	5				
Breeding	23/05/2015	2		Willow Warbler	1				
Breeding	23/05/2015	3		Willow Warbler	4				
Breeding	23/05/2015	4		Willow Warbler	5				
Breeding	23/05/2015	5		Willow Warbler	1				
Breeding	30/06/2015	1		Willow Warbler	1				
Breeding	30/06/2015	3		Willow Warbler	1				
Breeding	30/06/2015	4		Willow Warbler	2				
Breeding	30/06/2015	5		Willow Warbler	1				

Habitat codes follow Fossitt (2000) A Guide to Habitats in Ireland. Kilkenny: The Heritage Council

**Table 5 breeding bird quadrat survey records – summer 2016**

Date	Quadrat	Species	Breeding status	Comments
24/05/2016	Q10	Common Blackbird	Possible breeder	
24/05/2016	Q11	Common Blackbird	Confirmed breeder	
24/05/2016	Q13	Common Blackbird	Possible breeder	
24/05/2016	Q14	Common Blackbird	Possible breeder	
24/05/2016	Q15	Common Blackbird	Possible breeder	
24/05/2016	Q26	Common Blackbird	Possible breeder	
24/05/2016	Q27	Common Blackbird	Possible breeder	
24/05/2016	Q28	Common Blackbird	Possible breeder	

Date	Quadrat	Species	Breeding status	Comments
24/05/2016	Q29	Common Blackbird	Possible breeder	
24/05/2016	Q39	Common Blackbird	Possible breeder	
24/05/2016	Q4	Common Blackbird	Possible breeder	
24/05/2016	Q5	Common Blackbird	Possible breeder	
24/05/2016	Q7	Common Blackbird	Possible breeder	
24/05/2016	Q8	Common Blackbird	Possible breeder	
24/05/2016	Q9	Common Blackbird	Probable breeder	
26/05/2016	Q21	Common Blackbird	Possible breeder	
26/05/2016	Q22	Common Blackbird	Possible breeder	
26/05/2016	Q32	Common Blackbird	Possible breeder	
26/05/2016	Q43	Common Blackbird	Possible breeder	
12/07/2016	Q1	Common Blackbird	Probable breeder	
12/07/2016	Q4	Common Blackbird	Probable breeder	
12/07/2016	Q5	Common Blackbird	Confirmed breeder	
12/07/2016	Q2	Common Blackbird	Probable breeder	
12/07/2016	Q3	Common Blackbird	Probable breeder	
12/07/2016	Q6	Common Blackbird	Probable breeder	
12/07/2016	Q14	Common Blackbird	Probable breeder	
12/07/2016	Q8	Common Blackbird	Probable breeder	
12/07/2016	Q22	Common Blackbird	Confirmed breeder	
12/07/2016	Q21	Common Blackbird	Confirmed breeder	
12/07/2016	Q1	Blackcap	Probable breeder	
12/07/2016	Q8	Blackcap	Possible breeder	
12/07/2016	Q27	Blackcap	Possible breeder	
12/07/2016	Q3	Common Bullfinch	Probable breeder	
12/07/2016	Q3	Blue Tit	Probable breeder	
12/07/2016	Q8	Blue Tit	Probable breeder	

Date	Quadrat	Species	Breeding status	Comments
12/07/2016	Q43	Blue Tit	Probable breeder	
24/05/2016	Q39	Common Buzzard	Possible breeder	hunting over cutaway peat, grassland and scrub (in suitable nesting habitat)
14/06/2016	Q6	Common Buzzard	Possible breeder	hunting through birch and willow scrub. Flying low at 5-10m high
14/06/2016	Q6	Common Buzzard	Non-breeding	hunting through scrub. flying at 5-10m height
12/07/2016	Q38	Common Buzzard	Possible breeder	adult hunting over raised bog and grassland and cutover bog
24/05/2016	Q10	Chaffinch	Possible breeder	
24/05/2016	Q11	Chaffinch	Possible breeder	
24/05/2016	Q13	Chaffinch	Possible breeder	
24/05/2016	Q14	Chaffinch	Possible breeder	
24/05/2016	Q15	Chaffinch	Possible breeder	
24/05/2016	Q26	Chaffinch	Possible breeder	
24/05/2016	Q27	Chaffinch	Possible breeder	
24/05/2016	Q28	Chaffinch	Possible breeder	
24/05/2016	Q29	Chaffinch	Possible breeder	
24/05/2016	Q4	Chaffinch	Probable breeder	
24/05/2016	Q5	Chaffinch	Possible breeder	
24/05/2016	Q6	Chaffinch	Possible breeder	
24/05/2016	Q7	Chaffinch	Possible breeder	
24/05/2016	Q7	Chaffinch	Possible breeder	
24/05/2016	Q8	Chaffinch	Possible breeder	
24/05/2016	Q9	Chaffinch	Possible breeder	
26/05/2016	Q22	Chaffinch	Possible breeder	
26/05/2016	Q32	Chaffinch	Possible breeder	
26/05/2016	Q42	Chaffinch	Possible breeder	
26/05/2016	Q43	Chaffinch	Possible breeder	
12/07/2016	Q1	Chaffinch	Confirmed breeder	

Date	Quadrat	Species	Breeding status	Comments
12/07/2016	Q4	Chaffinch	Probable breeder	
12/07/2016	Q11	Chaffinch	Confirmed breeder	
12/07/2016	Q5	Chaffinch	Confirmed breeder	
12/07/2016	Q13	Chaffinch	Probable breeder	
12/07/2016	Q7	Chaffinch	Probable breeder	
12/07/2016	Q8	Chaffinch	Probable breeder	
12/07/2016	Q27	Chaffinch	Probable breeder	
12/07/2016	Q28	Chaffinch	Confirmed breeder	
12/07/2016	Q41	Chaffinch	Probable breeder	
12/07/2016	Q42	Chaffinch	Probable breeder	
12/07/2016	Q22	Chaffinch	Probable breeder	
24/05/2016	Q2	Common Cuckoo	Possible breeder	
14/06/2016	Q2	Common Cuckoo	Possible breeder	heard calling from mature scrub area and then flying NE into birch and willow scrub on cutover peat
14/06/2016	Q2	Common Cuckoo	Possible breeder	calling from scrub and then flying ne to new location in birch and willow scrub
12/07/2016	Q27	Dunnock	Probable breeder	
26/04/2016	Q26	Goldcrest	Possible breeder	
12/07/2016	Q3	European Goldfinch	Possible breeder	
24/05/2016	Q7	Great Tit	Possible breeder	
26/05/2016	Q42	Great Tit	Possible breeder	
12/07/2016	Q5	Great Tit	Confirmed breeder	
12/07/2016	Q2	Great Tit	Probable breeder	
12/07/2016	Q3	Great Tit	Confirmed breeder	
12/07/2016	Q14	Great Tit	Confirmed breeder	
12/07/2016	Q7	Great Tit	Probable breeder	
12/07/2016	Q26	Great Tit	Probable breeder	
12/07/2016	Q41	Great Tit	Probable breeder	
12/07/2016	Q42	Great Tit	Probable breeder	

Date	Quadrat	Species	Breeding status	Comments
12/07/2016	Q43	Great Tit	Probable breeder	
12/07/2016	Q21	Great Tit	Probable breeder	
12/07/2016	Q12	Grey Heron	Non-breeding	flying from drain across peat in SW direction
12/07/2016	Q24	Grey Heron	Non-breeding	flying from drain to E of site
12/07/2016	Q17	Hooded Crow	Non-breeding	
12/07/2016	Q10	Hen Harrier	Non-breeding	ringtail observed perched on bare peat among birch and willow scrub before hunting in S direction over scrub.
26/04/2016	Q17	Jack Snipe	Possible breeder	
24/05/2016	Q38	Common Kestrel	Possible breeder	hunting over cutaway peat and scrub (in suitable nesting habitat)
28/04/2016	Q13	Northern Lapwing	Possible breeder	pair recorded in area of wet grassland/open bog
28/04/2016	Q14	Northern Lapwing	Possible breeder	pair recorded in area of wet grassland/open bog
28/04/2016	Q15	Northern Lapwing	Non-breeding	single bird seen flying to the S
28/04/2016	Q5	Northern Lapwing	Possible breeder	pair recorded in area of wet grassland/open bog
24/05/2016	Q10	Northern Lapwing	Probable breeder	agitated behaviour - possibly chicks on site. See Map Ref. 020 for territory area
24/05/2016	Q13	Northern Lapwing	Probable breeder	agitated behaviour - possibly chicks on site. See Map Ref. 021 for territory area
24/05/2016	Q14	Northern Lapwing	Probable breeder	agitated behaviour - possibly chicks on site. See Map Ref. 022 for territory area
24/05/2016	Q15	Northern Lapwing	Probable breeder	three birds (one pair and a single bird). Agitated behaviour - indicates breeding. See Map Ref. 023 for territory area
24/05/2016	Q16	Northern Lapwing	Possible breeder	single bird. No calling/display (in suitable nesting habitat)
24/05/2016	Q6	Northern Lapwing	Probable breeder	agitated behaviour - possibly chicks on site. See Map Ref. 024 for territory area
24/05/2016	Q8	Northern Lapwing	Possible breeder	not much sign of agitation/display compared to others - single bird (in suitable nesting habitat)
14/06/2016	Q10	Northern Lapwing	Probable breeder	1 pair circling surveyor and alarm calling - likely to warn young on the ground. See Map Ref. 020

Date	Quadrat	Species	Breeding status	Comments
14/06/2016	Q12	Northern Lapwing	Probable breeder	3 birds continue to circle surveyor and alarm calling. 2 keep a greater distance without much calling - likely 2 pairs on site. See Map Ref. 025
14/06/2016	Q13	Northern Lapwing	Probable breeder	pair circling surveying in the air while in the area. Alarm calling - likely to young on ground
14/06/2016	Q14	Northern Lapwing	Probable breeder	1 pair later rising, then another. Circled surveyor and constantly alarm called - probably to young on ground. See Map Ref. 022
14/06/2016	Q15	Northern Lapwing	no status	small group flew directly over the bog track and away from the surveyor. Single calls heard while flying. Possibly an early family party or non-breeders
14/06/2016	Q6	Northern Lapwing	Probable breeder	1 pair circling surveyor tightly and constantly alarm calling - probably to young on ground. Not diving at surveyor as in previous surveys. See Map Ref. 24
14/06/2016	Q6	Northern Lapwing	Probable breeder	flying tight circle around surveyor and constant alarm call indicative of young on ground. not diving at surveyor as in previous survey. (a) - one pair
14/06/2016	Q10	Northern Lapwing	Probable breeder	flying tight circle around surveyor and alarm call indicative of young present. one pair (a)
14/06/2016	Q12	Northern Lapwing	Probable breeder	3 birds continue to circle surveyor and alarm call while remaining birds keep distance without much calling - probably 2 pairs (a)
14/06/2016	Q13	Northern Lapwing	Probable breeder	circling surveyor and alarm call indicative of young on ground (a) - one pair
14/06/2016	Q14	Northern Lapwing	Probable breeder	pair rise later than other birds but circle surveyor and alarm call. young probably present - (a) - one pair.
14/06/2016	Q15	Northern Lapwing	Possible breeder	Small group - flew directly over bog track and away from surveyor. single calls emitted while flying. possibly early family group or non-breeders. (h)
16/06/2016	Q34	Northern Lapwing	Non-breeding	single bird. Did not display or seem agitated. Flew W
12/07/2016	Q5	Northern Lapwing	Confirmed breeder	1 adult and 1 juvenile (recently fledged). Adult alarm calling and juvenile flying away from surveyor (FL)
12/07/2016	Q6	Northern Lapwing	Confirmed breeder	adult with 2 juveniles. Adult alarm calling with Juveniles close by (FL)
12/07/2016	Q14	Northern Lapwing	Possible breeder	adult flying N. No calling or display (H)

Date	Quadrat	Species	Breeding status	Comments
12/07/2016	Q9	Northern Lapwing	Confirmed breeder	1 adult and 1 juvenile (recently fledged) observed in birch and willow scrub on bare peat before rising and flying S. (FL)
12/07/2016	Q9	Northern Lapwing	Confirmed breeder	recently fledged Lapwing in cover of birch and willow scrub on peat mound. Calling but did not rise and fly away. Probably belonged to L in Ref. 1 above. (FL)
12/07/2016	Q17	Northern Lapwing	Possible breeder	3 adults observed on bare peat before flying N across site (H)
24/05/2016	Q11	Common Linnet	Probable breeder	
24/05/2016	Q13	Common Linnet	Possible breeder	
24/05/2016	Q13	Common Linnet	Possible breeder	
24/05/2016	Q14	Common Linnet	Possible breeder	
24/05/2016	Q27	Common Linnet	Possible breeder	
24/05/2016	Q29	Common Linnet	Possible breeder	
26/05/2016	Q32	Common Linnet	Possible breeder	
12/07/2016	Q5	Common Linnet	Probable breeder	
12/07/2016	Q2	Common Linnet	Probable breeder	
12/07/2016	Q3	Common Linnet	Probable breeder	
12/07/2016	Q13	Common Linnet	Probable breeder	
12/07/2016	Q27	Common Linnet	Possible breeder	
24/05/2016	Q5	Lesser Redpoll	Possible breeder	
12/07/2016	Q11	Lesser Redpoll	Possible breeder	
12/07/2016	Q3	Lesser Redpoll	Possible breeder	
12/07/2016	Q21	Lesser Redpoll	Possible breeder	
12/07/2016	Q4	Long-tailed Tit	Confirmed breeder	
12/07/2016	Q5	Long-tailed Tit	Possible breeder	
12/07/2016	Q8	Long-tailed Tit	Possible breeder	
12/07/2016	Q21	Long-tailed Tit	Possible breeder	
29/04/2016	Q42	Mistle Thrush	Possible breeder	

Date	Quadrat	Species	Breeding status	Comments
24/05/2016	Q11	Mistle Thrush	Probable breeder	
24/05/2016	Q27	Mistle Thrush	Possible breeder	
24/05/2016	Q4	Mistle Thrush	Possible breeder	
24/05/2016	Q5	Mistle Thrush	Possible breeder	
12/07/2016	Q5	Mistle Thrush	Possible breeder	
12/07/2016	Q2	Mistle Thrush	Possible breeder	
12/07/2016	Q7	Mistle Thrush	Possible breeder	
12/07/2016	Q8	Mistle Thrush	Possible breeder	
24/05/2016	Q14	Mallard	Probable breeder	visiting probable nest site. See Map Ref. 025
24/05/2016	Q4	Magpie	Possible breeder	
26/05/2016	Q43	Magpie	Possible breeder	
26/04/2016	Q16	Meadow Pipit	Possible breeder	
26/04/2016	Q17	Meadow Pipit	Possible breeder	
26/04/2016	Q18	Meadow Pipit	Possible breeder	
26/04/2016	Q19	Meadow Pipit	Possible breeder	
26/04/2016	Q20	Meadow Pipit	Possible breeder	
26/04/2016	Q21	Meadow Pipit	Possible breeder	
26/04/2016	Q22	Meadow Pipit	Possible breeder	
26/04/2016	Q26	Meadow Pipit	Possible breeder	
26/04/2016	Q27	Meadow Pipit	Possible breeder	
26/04/2016	Q28	Meadow Pipit	Possible breeder	
26/04/2016	Q30	Meadow Pipit	Possible breeder	
28/04/2016	Q1	Meadow Pipit	Possible breeder	
28/04/2016	Q10	Meadow Pipit	Possible breeder	
28/04/2016	Q11	Meadow Pipit	Possible breeder	
28/04/2016	Q12	Meadow Pipit	Possible breeder	
28/04/2016	Q13	Meadow Pipit	Possible breeder	

Date	Quadrat	Species	Breeding status	Comments
28/04/2016	Q14	Meadow Pipit	Possible breeder	
28/04/2016	Q15	Meadow Pipit	Possible breeder	
28/04/2016	Q2	Meadow Pipit	Possible breeder	
28/04/2016	Q3	Meadow Pipit	Possible breeder	
28/04/2016	Q4	Meadow Pipit	Possible breeder	
28/04/2016	Q5	Meadow Pipit	Possible breeder	
28/04/2016	Q6	Meadow Pipit	Possible breeder	
28/04/2016	Q7	Meadow Pipit	Possible breeder	
28/04/2016	Q9	Meadow Pipit	Possible breeder	
29/04/2016	Q34	Meadow Pipit	Possible breeder	
29/04/2016	Q35	Meadow Pipit	Possible breeder	
29/04/2016	Q36	Meadow Pipit	Possible breeder	
29/04/2016	Q37	Meadow Pipit	Possible breeder	
29/04/2016	Q38	Meadow Pipit	Possible breeder	
29/04/2016	Q40	Meadow Pipit	Possible breeder	
29/04/2016	Q41	Meadow Pipit	Possible breeder	
29/04/2016	Q42	Meadow Pipit	Possible breeder	
29/04/2016	Q43	Meadow Pipit	Possible breeder	
24/05/2016	Q10	Meadow Pipit	Confirmed breeder	
24/05/2016	Q11	Meadow Pipit	Confirmed breeder	
24/05/2016	Q12	Meadow Pipit	Confirmed breeder	
24/05/2016	Q13	Meadow Pipit	Possible breeder	
24/05/2016	Q16	Meadow Pipit	Possible breeder	
24/05/2016	Q17	Meadow Pipit	Possible breeder	
24/05/2016	Q18	Meadow Pipit	Possible breeder	
24/05/2016	Q2	Meadow Pipit	Possible breeder	
24/05/2016	Q25	Meadow Pipit	Possible breeder	
24/05/2016	Q27	Meadow Pipit	Possible breeder	

Date	Quadrat	Species	Breeding status	Comments
24/05/2016	Q28	Meadow Pipit	Possible breeder	
24/05/2016	Q36	Meadow Pipit	Possible breeder	
24/05/2016	Q37	Meadow Pipit	Confirmed breeder	
24/05/2016	Q38	Meadow Pipit	Confirmed breeder	
24/05/2016	Q39	Meadow Pipit	Confirmed breeder	
24/05/2016	Q4	Meadow Pipit	Possible breeder	
24/05/2016	Q40	Meadow Pipit	Confirmed breeder	
24/05/2016	Q6	Meadow Pipit	Possible breeder	
24/05/2016	Q6	Meadow Pipit	Confirmed breeder	
24/05/2016	Q7	Meadow Pipit	Possible breeder	
26/05/2016	Q21	Meadow Pipit	Possible breeder	
26/05/2016	Q22	Meadow Pipit	Possible breeder	
12/07/2016	Q1	Meadow Pipit	Confirmed breeder	
12/07/2016	Q4	Meadow Pipit	Confirmed breeder	
12/07/2016	Q11	Meadow Pipit	Confirmed breeder	
12/07/2016	Q12	Meadow Pipit	Confirmed breeder	
12/07/2016	Q3	Meadow Pipit	Confirmed breeder	
12/07/2016	Q6	Meadow Pipit	Confirmed breeder	
12/07/2016	Q10	Meadow Pipit	Confirmed breeder	
12/07/2016	Q13	Meadow Pipit	Probable breeder	
12/07/2016	Q14	Meadow Pipit	Confirmed breeder	
12/07/2016	Q9	Meadow Pipit	Probable breeder	
12/07/2016	Q7	Meadow Pipit	Confirmed breeder	
12/07/2016	Q8	Meadow Pipit	Confirmed breeder	
12/07/2016	Q15	Meadow Pipit	Confirmed breeder	
12/07/2016	Q16	Meadow Pipit	Probable breeder	
12/07/2016	Q27	Meadow Pipit	Confirmed breeder	

Date	Quadrat	Species	Breeding status	Comments
12/07/2016	Q38	Meadow Pipit	Probable breeder	
12/07/2016	Q39	Meadow Pipit	Probable breeder	
12/07/2016	Q37	Meadow Pipit	Confirmed breeder	
12/07/2016	Q28	Meadow Pipit	Probable breeder	
12/07/2016	Q17	Meadow Pipit	Probable breeder	
12/07/2016	Q25	Meadow Pipit	Probable breeder	
12/07/2016	Q36	Meadow Pipit	Probable breeder	
12/07/2016	Q40	Meadow Pipit	Confirmed breeder	
12/07/2016	Q41	Meadow Pipit	Confirmed breeder	
12/07/2016	Q35	Meadow Pipit	Probable breeder	
12/07/2016	Q30	Meadow Pipit	Probable breeder	
12/07/2016	Q19	Meadow Pipit	Confirmed breeder	
12/07/2016	Q42	Meadow Pipit	Probable breeder	
12/07/2016	Q43	Meadow Pipit	Probable breeder	
12/07/2016	Q36	Peregrine Falcon	Confirmed breeder	1 adult and 1 juvenile perched on top of peat mound before flying N over track and scrub and bare peat (FL)
24/05/2016	Q11	Common Pheasant	Possible breeder	
24/05/2016	Q17	Common Pheasant	Possible breeder	
12/07/2016	Q41	Pied Wagtail	Possible breeder	
12/07/2016	Q43	Pied Wagtail	Possible breeder	
26/04/2016	Q22	European Robin	Possible breeder	
26/04/2016	Q26	European Robin	Possible breeder	
26/04/2016	Q27	European Robin	Possible breeder	
26/04/2016	Q28	European Robin	Possible breeder	
28/04/2016	Q1	European Robin	Possible breeder	
28/04/2016	Q2	European Robin	Possible breeder	
28/04/2016	Q3	European Robin	Possible breeder	

Date	Quadrat	Species	Breeding status	Comments
28/04/2016	Q7	European Robin	Possible breeder	
29/04/2016	Q40	European Robin	Possible breeder	
29/04/2016	Q41	European Robin	Possible breeder	
29/04/2016	Q42	European Robin	Possible breeder	
29/04/2016	Q43	European Robin	Possible breeder	
24/05/2016	Q11	European Robin	Possible breeder	
24/05/2016	Q15	European Robin	Possible breeder	
24/05/2016	Q18	European Robin	Possible breeder	
24/05/2016	Q2	European Robin	Possible breeder	
24/05/2016	Q26	European Robin	Possible breeder	
24/05/2016	Q27	European Robin	Possible breeder	
24/05/2016	Q36	European Robin	Possible breeder	
24/05/2016	Q39	European Robin	Possible breeder	
24/05/2016	Q4	European Robin	Possible breeder	
24/05/2016	Q5	European Robin	Possible breeder	
24/05/2016	Q7	European Robin	Possible breeder	
24/05/2016	Q8	European Robin	Possible breeder	
24/05/2016	Q9	European Robin	Possible breeder	
26/05/2016	Q21	European Robin	Possible breeder	
26/05/2016	Q22	European Robin	Possible breeder	
26/05/2016	Q32	European Robin	Possible breeder	
26/05/2016	Q42	European Robin	Possible breeder	
26/05/2016	Q43	European Robin	Possible breeder	
12/07/2016	Q1	European Robin	Confirmed breeder	
12/07/2016	Q4	European Robin	Probable breeder	
12/07/2016	Q11	European Robin	Confirmed breeder	
12/07/2016	Q5	European Robin	Confirmed breeder	

Date	Quadrat	Species	Breeding status	Comments
12/07/2016	Q2	European Robin	Confirmed breeder	
12/07/2016	Q3	European Robin	Confirmed breeder	
12/07/2016	Q6	European Robin	Probable breeder	
12/07/2016	Q14	European Robin	Probable breeder	
12/07/2016	Q9	European Robin	Probable breeder	
12/07/2016	Q27	European Robin	Confirmed breeder	
12/07/2016	Q37	European Robin	Probable breeder	
12/07/2016	Q28	European Robin	Confirmed breeder	
12/07/2016	Q26	European Robin	Probable breeder	
12/07/2016	Q41	European Robin	Possible breeder	
12/07/2016	Q43	European Robin	Probable breeder	
12/07/2016	Q21	European Robin	Probable breeder	
24/05/2016	Q11	Reed Bunting	Possible breeder	
24/05/2016	Q13	Reed Bunting	Possible breeder	
24/05/2016	Q14	Reed Bunting	Possible breeder	
24/05/2016	Q2	Reed Bunting	Possible breeder	
24/05/2016	Q26	Reed Bunting	Possible breeder	
24/05/2016	Q29	Reed Bunting	Possible breeder	
24/05/2016	Q4	Reed Bunting	Possible breeder	
24/05/2016	Q5	Reed Bunting	Possible breeder	
24/05/2016	Q6	Reed Bunting	Possible breeder	
24/05/2016	Q9	Reed Bunting	Possible breeder	
26/05/2016	Q22	Reed Bunting	Possible breeder	
26/05/2016	Q32	Reed Bunting	Possible breeder	
12/07/2016	Q4	Reed Bunting	Probable breeder	
12/07/2016	Q4	Reed Bunting	Probable breeder	
12/07/2016	Q11	Reed Bunting	Probable breeder	
12/07/2016	Q11	Reed Bunting	Probable breeder	

Date	Quadrat	Species	Breeding status	Comments
12/07/2016	Q5	Reed Bunting	Probable breeder	
12/07/2016	Q2	Reed Bunting	Probable breeder	
12/07/2016	Q10	Reed Bunting	Probable breeder	
12/07/2016	Q14	Reed Bunting	Confirmed breeder	
12/07/2016	Q9	Reed Bunting	Probable breeder	
12/07/2016	Q7	Reed Bunting	Confirmed breeder	
12/07/2016	Q15	Reed Bunting	Probable breeder	
12/07/2016	Q37	Reed Bunting	Probable breeder	
12/07/2016	Q28	Reed Bunting	Probable breeder	
12/07/2016	Q29	Reed Bunting	Probable breeder	
12/07/2016	Q22	Reed Bunting	Confirmed breeder	
26/04/2016	Q20	Ringed Plover	Possible breeder	pair recorded in quarry
29/04/2016	Q40	Ringed Plover	Possible breeder	pair recorded in area of wet grassland/open bog
24/05/2016	Q14	Ringed Plover	Probable breeder	agitated behaviour in SW sector of study area
14/06/2016	Q12	Ringed Plover	Probable breeder	emitting constant alarm and contact calling and flying in short flights ahead of surveying before returning to where they were first observed - alarmed behaviour indicates potential chicks. See Map Ref. 011
14/06/2016	Q12	Ringed Plover	Probable breeder	emits constant alarm call (a)
14/06/2016	Q36	Ringed Plover	Probable breeder	pair emitting alarm call and flying along surveyor before returning to territory. (a)
16/06/2016	Q36	Ringed Plover	Probable breeder	pair emitting alarm calls and flying along by surveyor. Returned to where first observed afterward. See Map Ref. 012
12/07/2016	Q12	Ringed Plover	Confirmed breeder	pair. Male performs distraction display indicative of chicks present, though not observed in the young fen habitat
12/07/2016	Q36	Ringed Plover	Confirmed breeder	adult calling from fen vegetation with chick nearby (approximately two weeks old - approaching fledging age)
26/04/2016	Q16	Sky Lark	Possible breeder	
26/04/2016	Q16	Sky Lark	Possible breeder	

Date	Quadrat	Species	Breeding status	Comments
26/04/2016	Q17	Sky Lark	Possible breeder	
26/04/2016	Q18	Sky Lark	Possible breeder	
26/04/2016	Q19	Sky Lark	Possible breeder	
26/04/2016	Q20	Sky Lark	Possible breeder	
26/04/2016	Q21	Sky Lark	Possible breeder	
26/04/2016	Q22	Sky Lark	Possible breeder	
26/04/2016	Q26	Sky Lark	Possible breeder	
28/04/2016	Q1	Sky Lark	Possible breeder	
28/04/2016	Q10	Sky Lark	Possible breeder	
28/04/2016	Q11	Sky Lark	Possible breeder	
28/04/2016	Q12	Sky Lark	Possible breeder	
28/04/2016	Q13	Sky Lark	Possible breeder	
28/04/2016	Q14	Sky Lark	Possible breeder	
28/04/2016	Q15	Sky Lark	Possible breeder	
28/04/2016	Q2	Sky Lark	Possible breeder	
28/04/2016	Q4	Sky Lark	Possible breeder	
28/04/2016	Q5	Sky Lark	Possible breeder	
28/04/2016	Q6	Sky Lark	Possible breeder	
28/04/2016	Q9	Sky Lark	Possible breeder	
29/04/2016	Q34	Sky Lark	Possible breeder	
29/04/2016	Q35	Sky Lark	Possible breeder	
29/04/2016	Q36	Sky Lark	Possible breeder	
29/04/2016	Q37	Sky Lark	Possible breeder	
29/04/2016	Q38	Sky Lark	Possible breeder	
29/04/2016	Q40	Sky Lark	Possible breeder	
29/04/2016	Q41	Sky Lark	Possible breeder	
29/04/2016	Q42	Sky Lark	Possible breeder	
24/05/2016	Q10	Sky Lark	Possible breeder	
24/05/2016	Q11	Sky Lark	Possible breeder	
24/05/2016	Q12	Sky Lark	Possible breeder	
24/05/2016	Q13	Sky Lark	Possible breeder	
24/05/2016	Q17	Sky Lark	Possible breeder	
24/05/2016	Q18	Sky Lark	Possible breeder	
24/05/2016	Q2	Sky Lark	Possible breeder	

Date	Quadrat	Species	Breeding status	Comments
24/05/2016	Q25	Sky Lark	Possible breeder	
24/05/2016	Q27	Sky Lark	Possible breeder	
24/05/2016	Q37	Sky Lark	Possible breeder	
24/05/2016	Q38	Sky Lark	Possible breeder	
24/05/2016	Q40	Sky Lark	Possible breeder	
24/05/2016	Q5	Sky Lark	Possible breeder	
24/05/2016	Q6	Sky Lark	Possible breeder	
24/05/2016	Q6	Sky Lark	Possible breeder	
24/05/2016	Q9	Sky Lark	Possible breeder	
26/05/2016	Q21	Sky Lark	Possible breeder	
12/07/2016	Q11	Sky Lark	Probable breeder	
12/07/2016	Q12	Sky Lark	Probable breeder	
12/07/2016	Q2	Sky Lark	Probable breeder	
12/07/2016	Q6	Sky Lark	Probable breeder	
12/07/2016	Q10	Sky Lark	Confirmed breeder	
12/07/2016	Q13	Sky Lark	Probable breeder	
12/07/2016	Q14	Sky Lark	Probable breeder	
12/07/2016	Q9	Sky Lark	Probable breeder	
12/07/2016	Q7	Sky Lark	Probable breeder	
12/07/2016	Q15	Sky Lark	Probable breeder	
12/07/2016	Q16	Sky Lark	Probable breeder	
12/07/2016	Q27	Sky Lark	Confirmed breeder	
12/07/2016	Q38	Sky Lark	Probable breeder	
12/07/2016	Q39	Sky Lark	Probable breeder	
12/07/2016	Q37	Sky Lark	Probable breeder	
12/07/2016	Q17	Sky Lark	Probable breeder	
12/07/2016	Q18	Sky Lark	Probable breeder	
12/07/2016	Q36	Sky Lark	Probable breeder	
12/07/2016	Q40	Sky Lark	Probable breeder	
12/07/2016	Q19	Sky Lark	Probable breeder	
12/07/2016	Q32	Sky Lark	Probable breeder	
24/05/2016	Q11	Stonechat	Possible breeder	
24/05/2016	Q12	Stonechat	Possible breeder	
24/05/2016	Q6	Stonechat	Possible breeder	

Date	Quadrat	Species	Breeding status	Comments
12/07/2016	Q1	Stonechat	Confirmed breeder	
24/05/2016	Q14	Barn Swallow	Possible breeder	
24/05/2016	Q17	Barn Swallow	Non-breeding	
24/05/2016	Q29	Barn Swallow	Non-breeding	
24/05/2016	Q38	Barn Swallow	Non-breeding	
24/05/2016	Q5	Barn Swallow	Possible breeder	
24/05/2016	Q6	Barn Swallow	Possible breeder	
24/05/2016	Q7	Barn Swallow	Possible breeder	
24/05/2016	Q8	Barn Swallow	Non-breeding	
26/04/2016	Q20	Sand Martin	Possible breeder	
26/04/2016	Q17	Common Snipe	Possible breeder	
26/04/2016	Q21	Common Snipe	Possible breeder	
28/04/2016	Q15	Common Snipe	Possible breeder	
28/04/2016	Q5	Common Snipe	Possible breeder	
28/04/2016	Q6	Common Snipe	Possible breeder	
29/04/2016	Q37	Common Snipe	Possible breeder	
24/05/2016	Q14	Common Snipe	Non-breeding	flushed from drain
14/06/2016	Q14	Common Snipe	Probable breeder	flushed from birch and willow scrub. Drumming and chipping in the air. See Map Ref. 013
14/06/2016	Q2	Common Snipe	Probable breeder	flushed at last second by observed and flew off drumming. See Map Ref. 014
14/06/2016	Q6	Common Snipe	Probable breeder	flushed - drumming and chipping - likely from territory south of the railway track identified earlier
14/06/2016	Q2	Common Snipe	Probable breeder	display flight (drumming and chipping)
14/06/2016	Q6	Common Snipe	Probable breeder	display flight (drumming and chipping)
14/06/2016	Q14	Common Snipe	Probable breeder	display flight (drumming and chipping)
12/07/2016	Q6	Common Snipe	Possible breeder	flushed from drain - No drumming or chipping
12/07/2016	Q9	Common Snipe	Possible breeder	flushed from drain - No drumming or chipping
29/04/2016	Q42	Song Thrush	Possible breeder	
29/04/2016	Q43	Song Thrush	Possible breeder	
24/05/2016	Q15	Song Thrush	Possible breeder	
24/05/2016	Q4	Song Thrush	Possible breeder	
24/05/2016	Q6	Song Thrush	Possible breeder	
24/05/2016	Q7	Song Thrush	Possible breeder	

Date	Quadrat	Species	Breeding status	Comments
26/05/2016	Q21	Song Thrush	Possible breeder	
12/07/2016	Q1	Song Thrush	Probable breeder	
12/07/2016	Q27	Song Thrush	Probable breeder	
12/07/2016	Q22	Song Thrush	Probable breeder	
24/05/2016	Q11	Sedge Warbler	Possible breeder	
24/05/2016	Q13	Sedge Warbler	Possible breeder	
24/05/2016	Q29	Sedge Warbler	Possible breeder	
24/05/2016	Q4	Sedge Warbler	Possible breeder	
26/05/2016	Q43	Sedge Warbler	Possible breeder	
12/07/2016	Q11	Sedge Warbler	Probable breeder	
12/07/2016	Q27	Sedge Warbler	Probable breeder	
12/07/2016	Q37	Sedge Warbler	Probable breeder	
12/07/2016	Q29	Sedge Warbler	Probable breeder	
26/04/2016	Q16	Northern Wheatear	Possible breeder	
26/04/2016	Q17	Northern Wheatear	Possible breeder	
28/04/2016	Q12	Northern Wheatear	Possible breeder	
28/04/2016	Q14	Northern Wheatear	Possible breeder	
29/04/2016	Q41	Northern Wheatear	Possible breeder	
29/04/2016	Q42	Northern Wheatear	Possible breeder	
24/05/2016	Q6	Northern Wheatear	Possible breeder	
24/05/2016	Q10	Common Whitethroat	Possible breeder	
24/05/2016	Q11	Common Whitethroat	Possible breeder	
24/05/2016	Q12	Common Whitethroat	Possible breeder	
24/05/2016	Q13	Common Whitethroat	Possible breeder	
24/05/2016	Q15	Common Whitethroat	Possible breeder	
24/05/2016	Q2	Common Whitethroat	Possible breeder	
24/05/2016	Q29	Common Whitethroat	Possible breeder	
24/05/2016	Q4	Common Whitethroat	Possible breeder	
24/05/2016	Q5	Common Whitethroat	Possible breeder	
24/05/2016	Q7	Common Whitethroat	Possible breeder	
24/05/2016	Q8	Common Whitethroat	Possible breeder	
24/05/2016	Q9	Common Whitethroat	Possible breeder	
12/07/2016	Q1	Common Whitethroat	Probable breeder	
12/07/2016	Q5	Common Whitethroat	Probable breeder	

Date	Quadrat	Species	Breeding status	Comments
12/07/2016	Q3	Common Whitethroat	Probable breeder	
12/07/2016	Q7	Common Whitethroat	Probable breeder	
12/07/2016	Q27	Common Whitethroat	Probable breeder	
12/07/2016	Q28	Common Whitethroat	Probable breeder	
12/07/2016	Q21	Common Whitethroat	Probable breeder	
24/05/2016	Q2	Wood Pigeon	Possible breeder	
24/05/2016	Q11	Winter Wren	Possible breeder	
24/05/2016	Q15	Winter Wren	Possible breeder	
24/05/2016	Q2	Winter Wren	Possible breeder	
24/05/2016	Q26	Winter Wren	Possible breeder	
24/05/2016	Q27	Winter Wren	Possible breeder	
24/05/2016	Q28	Winter Wren	Possible breeder	
24/05/2016	Q4	Winter Wren	no status	
24/05/2016	Q5	Winter Wren	Possible breeder	
24/05/2016	Q6	Winter Wren	Possible breeder	
24/05/2016	Q7	Winter Wren	Possible breeder	
24/05/2016	Q8	Winter Wren	Possible breeder	
26/05/2016	Q32	Winter Wren	Possible breeder	
26/05/2016	Q42	Winter Wren	Possible breeder	
26/05/2016	Q43	Winter Wren	Confirmed breeder	
12/07/2016	Q1	Winter Wren	Confirmed breeder	
12/07/2016	Q4	Winter Wren	Probable breeder	
12/07/2016	Q11	Winter Wren	Confirmed breeder	
12/07/2016	Q5	Winter Wren	Confirmed breeder	
12/07/2016	Q2	Winter Wren	Confirmed breeder	
12/07/2016	Q3	Winter Wren	Probable breeder	
12/07/2016	Q13	Winter Wren	Probable breeder	
12/07/2016	Q9	Winter Wren	Probable breeder	
12/07/2016	Q7	Winter Wren	Confirmed breeder	
12/07/2016	Q8	Winter Wren	Probable breeder	
12/07/2016	Q16	Winter Wren	Probable breeder	
12/07/2016	Q26	Winter Wren	Probable breeder	
12/07/2016	Q41	Winter Wren	Probable breeder	
12/07/2016	Q30	Winter Wren	Probable breeder	

Date	Quadrat	Species	Breeding status	Comments
12/07/2016	Q42	Winter Wren	Confirmed breeder	
12/07/2016	Q43	Winter Wren	Probable breeder	
12/07/2016	Q32	Winter Wren	Probable breeder	
12/07/2016	Q22	Winter Wren	Probable breeder	
24/05/2016	Q10	Willow Warbler	Possible breeder	
24/05/2016	Q11	Willow Warbler	Possible breeder	
24/05/2016	Q13	Willow Warbler	Possible breeder	
24/05/2016	Q14	Willow Warbler	Possible breeder	
24/05/2016	Q15	Willow Warbler	Possible breeder	
24/05/2016	Q2	Willow Warbler	Possible breeder	
24/05/2016	Q26	Willow Warbler	Possible breeder	
24/05/2016	Q27	Willow Warbler	Possible breeder	
24/05/2016	Q28	Willow Warbler	Possible breeder	
24/05/2016	Q29	Willow Warbler	Possible breeder	
24/05/2016	Q36	Willow Warbler	Possible breeder	
24/05/2016	Q39	Willow Warbler	Possible breeder	
24/05/2016	Q4	Willow Warbler	Possible breeder	
24/05/2016	Q5	Willow Warbler	Possible breeder	
24/05/2016	Q7	Willow Warbler	Possible breeder	
24/05/2016	Q8	Willow Warbler	Possible breeder	
26/05/2016	Q21	Willow Warbler	Possible breeder	
26/05/2016	Q22	Willow Warbler	Possible breeder	
26/05/2016	Q32	Willow Warbler	Possible breeder	
26/05/2016	Q42	Willow Warbler	Possible breeder	
26/05/2016	Q43	Willow Warbler	Possible breeder	
12/07/2016	Q4	Willow Warbler	Probable breeder	
12/07/2016	Q11	Willow Warbler	Probable breeder	
12/07/2016	Q12	Willow Warbler	Probable breeder	
12/07/2016	Q5	Willow Warbler	Probable breeder	
12/07/2016	Q2	Willow Warbler	Probable breeder	
12/07/2016	Q6	Willow Warbler	Probable breeder	
12/07/2016	Q10	Willow Warbler	Probable breeder	
12/07/2016	Q13	Willow Warbler	Probable breeder	
12/07/2016	Q14	Willow Warbler	Probable breeder	

Date	Quadrat	Species	Breeding status	Comments
12/07/2016	Q14	Willow Warbler	Confirmed breeder	
12/07/2016	Q7	Willow Warbler	Confirmed breeder	
12/07/2016	Q8	Willow Warbler	Probable breeder	
12/07/2016	Q15	Willow Warbler	Probable breeder	
12/07/2016	Q27	Willow Warbler	Probable breeder	
12/07/2016	Q26	Willow Warbler	Probable breeder	
12/07/2016	Q29	Willow Warbler	Probable breeder	
12/07/2016	Q30	Willow Warbler	Probable breeder	
12/07/2016	Q42	Willow Warbler	Probable breeder	
12/07/2016	Q32	Willow Warbler	Probable breeder	
12/07/2016	Q22	Willow Warbler	Probable breeder	
12/07/2016	Q21	Willow Warbler	Confirmed breeder	
14/06/2016	Q1	Willow Warbler	Possible breeder	
14/06/2016	Q1	Winter Wren	Possible breeder	
14/06/2016	Q1	Dunnock	Possible breeder	
14/06/2016	Q1	Long-tailed Tit	Confirmed breeder	
14/06/2016	Q1	Blackcap	Possible breeder	
14/06/2016	Q1	Song Thrush	Possible breeder	
14/06/2016	Q1	Common Whitethroat	Possible breeder	
14/06/2016	Q1	Meadow Pipit	Possible breeder	
14/06/2016	Q1	Chaffinch	Possible breeder	
14/06/2016	Q1	Meadow Pipit	Possible breeder	
14/06/2016	Q1	Common Linnet	Possible breeder	
14/06/2016	Q1	Song Thrush	Possible breeder	
14/06/2016	Q1	European Robin	Possible breeder	
14/06/2016	Q1	Common Blackbird	Possible breeder	
14/06/2016	Q1	Stonechat	Confirmed breeder	
14/06/2016	Q4	Sky Lark	Possible breeder	
14/06/2016	Q4	Common Blackbird	Confirmed breeder	
14/06/2016	Q4	Common Linnet	Possible breeder	
14/06/2016	Q4	Lesser Redpoll	Possible breeder	
14/06/2016	Q4	Reed Bunting	Possible breeder	
14/06/2016	Q4	Winter Wren	Possible breeder	
14/06/2016	Q4	Magpie	Possible breeder	

Date	Quadrat	Species	Breeding status	Comments
14/06/2016	Q4	Willow Warbler	Possible breeder	
14/06/2016	Q4	Meadow Pipit	Confirmed breeder	
14/06/2016	Q4	Chaffinch	Possible breeder	
14/06/2016	Q4	European Robin	Possible breeder	
14/06/2016	Q12	Meadow Pipit	Confirmed breeder	
14/06/2016	Q12	Sky Lark	Confirmed breeder	
14/06/2016	Q12	Stonechat	Confirmed breeder	
14/06/2016	Q12	Northern Lapwing	Probable breeder	4 birds present. Probably 2 pairs. Individuals were alarm calling and agitated as if young were present.
14/06/2016	Q12	Ringed Plover	Probable breeder	Male - alarm calling - One pair
14/06/2016	Q11	Sky Lark	Possible breeder	
14/06/2016	Q11	Hooded Crow	Possible breeder	
14/06/2016	Q11	Meadow Pipit	Possible breeder	
14/06/2016	Q11	European Robin	Possible breeder	
14/06/2016	Q11	Mistle Thrush	Possible breeder	
14/06/2016	Q11	Common Linnet	Possible breeder	
14/06/2016	Q11	Sedge Warbler	Confirmed breeder	
14/06/2016	Q11	Common Blackbird	Confirmed breeder	
14/06/2016	Q11	Reed Bunting	Possible breeder	
14/06/2016	Q11	Willow Warbler	Possible breeder	
14/06/2016	Q5	Magpie	Possible breeder	
14/06/2016	Q5	Duncock	Possible breeder	
14/06/2016	Q5	Common Linnet	Possible breeder	
14/06/2016	Q5	Great Tit	Confirmed breeder	
14/06/2016	Q5	Reed Bunting	Possible breeder	
14/06/2016	Q5	Common Whitethroat	Possible breeder	
14/06/2016	Q5	Common Blackbird	Possible breeder	
14/06/2016	Q5	Chaffinch	Confirmed breeder	
14/06/2016	Q5	Willow Warbler	Possible breeder	
14/06/2016	Q5	Meadow Pipit	Possible breeder	
14/06/2016	Q2	Chaffinch	Confirmed breeder	
14/06/2016	Q2	Sky Lark	Possible breeder	
14/06/2016	Q2	Common Snipe	Probable breeder	In display - drumming and chipping
14/06/2016	Q2	Barn Swallow	Possible breeder	

Date	Quadrat	Species	Breeding status	Comments
14/06/2016	Q2	Stonechat	Confirmed breeder	
14/06/2016	Q2	Common Linnet	Possible breeder	
14/06/2016	Q2	Reed Bunting	Possible breeder	
14/06/2016	Q2	Chaffinch	Possible breeder	
14/06/2016	Q2	European Robin	Possible breeder	
14/06/2016	Q2	Winter Wren	Possible breeder	
14/06/2016	Q2	Willow Warbler	Possible breeder	
14/06/2016	Q2	European Goldfinch	Possible breeder	
14/06/2016	Q2	Common Cuckoo	Probable breeder	Singing male
14/06/2016	Q2	Lesser Redpoll	Possible breeder	
14/06/2016	Q2	Long-tailed Tit	Confirmed breeder	
14/06/2016	Q3	European Robin	Possible breeder	
14/06/2016	Q3	Willow Warbler	Possible breeder	
14/06/2016	Q3	Winter Wren	Confirmed breeder	
14/06/2016	Q3	Great Tit	Confirmed breeder	
14/06/2016	Q3	Common Blackbird	Confirmed breeder	
14/06/2016	Q3	Mistle Thrush	Possible breeder	
14/06/2016	Q3	Sky Lark	Possible breeder	
14/06/2016	Q3	Chaffinch	Possible breeder	
14/06/2016	Q3	Common Bullfinch	Possible breeder	
14/06/2016	Q3	Song Thrush	Possible breeder	
14/06/2016	Q3	Meadow Pipit	Possible breeder	
14/06/2016	Q6	Sky Lark	Confirmed breeder	
14/06/2016	Q6	Common Snipe	Probable breeder	Display - drumming and chipping
14/06/2016	Q6	Northern Lapwing	Probable breeder	One pair - constant alarm call (indicative of young on ground)
14/06/2016	Q6	Meadow Pipit	Possible breeder	
14/06/2016	Q6	Common Buzzard	Non-breeding	Hunting
14/06/2016	Q6	Reed Bunting	Possible breeder	
14/06/2016	Q6	Common Linnet	Possible breeder	
14/06/2016	Q6	European Robin	Confirmed breeder	
14/06/2016	Q6	Willow Warbler	Confirmed breeder	
14/06/2016	Q6	Common Blackbird	Confirmed breeder	
14/06/2016	Q6	Common Whitethroat	Possible breeder	

Date	Quadrat	Species	Breeding status	Comments
14/06/2016	Q10	Northern Lapwing	Probable breeder	One pair - constant alarm call (indicative of young on ground)
14/06/2016	Q10	Meadow Pipit	Confirmed breeder	
14/06/2016	Q10	Sky Lark	Confirmed breeder	
14/06/2016	Q10	Winter Wren	Possible breeder	
14/06/2016	Q10	Common Blackbird	Possible breeder	
14/06/2016	Q10	Willow Warbler	Possible breeder	
14/06/2016	Q10	Dunnock	Possible breeder	
14/06/2016	Q10	Reed Bunting	Possible breeder	
14/06/2016	Q13	Northern Lapwing	Probable breeder	One pair - constant alarm call (indicative of young on ground)
14/06/2016	Q13	Sky Lark	Possible breeder	
14/06/2016	Q13	Reed Bunting	Possible breeder	
14/06/2016	Q13	Willow Warbler	Possible breeder	
14/06/2016	Q13	Meadow Pipit	Possible breeder	
14/06/2016	Q13	Chaffinch	Possible breeder	
14/06/2016	Q13	Song Thrush	Possible breeder	
14/06/2016	Q13	Lesser Redpoll	Possible breeder	
14/06/2016	Q7	Common Blackbird	Possible breeder	
14/06/2016	Q7	Song Thrush	Possible breeder	
14/06/2016	Q7	Willow Warbler	Possible breeder	
14/06/2016	Q7	European Robin	Possible breeder	
14/06/2016	Q7	Common Whitethroat	Possible breeder	
14/06/2016	Q7	Winter Wren	Possible breeder	
14/06/2016	Q7	Common Wood Pigeon	Possible breeder	
14/06/2016	Q7	Mistle Thrush	Possible breeder	
14/06/2016	Q7	Goldcrest	Possible breeder	
14/06/2016	Q7	Chaffinch	Possible breeder	
14/06/2016	Q7	Sky Lark	Possible breeder	
14/06/2016	Q7	Long-tailed Tit	Confirmed breeder	
14/06/2016	Q7	Common Chiffchaff	Possible breeder	
14/06/2016	Q9	Sky Lark	Confirmed breeder	
14/06/2016	Q9	Meadow Pipit	Possible breeder	
14/06/2016	Q9	European Robin	Confirmed breeder	

Date	Quadrat	Species	Breeding status	Comments
14/06/2016	Q9	Chaffinch	Possible breeder	
14/06/2016	Q9	Reed Bunting	Possible breeder	
14/06/2016	Q14	Northern Lapwing	Probable breeder	One pair - constant alarm call (indicative of young on ground)
14/06/2016	Q14	Stonechat	Possible breeder	
14/06/2016	Q14	Common Snipe	Probable breeder	Display - drumming and chipping
14/06/2016	Q14	Sky Lark	Possible breeder	
14/06/2016	Q14	Common Blackbird	Possible breeder	
14/06/2016	Q14	Willow Warbler	Possible breeder	
14/06/2016	Q14	Reed Bunting	Possible breeder	
14/06/2016	Q14	Chaffinch	Possible breeder	
14/06/2016	Q15	Northern Lapwing	Probable breeder	Group of 5 birds. Flew out of quadrant without agitation - possibly an early family group or non-breeders
14/06/2016	Q15	Willow Warbler	Possible breeder	
14/06/2016	Q15	Winter Wren	Possible breeder	
14/06/2016	Q15	European Robin	Possible breeder	
14/06/2016	Q15	Sky Lark	Possible breeder	
14/06/2016	Q15	Common Blackbird	Possible breeder	
14/06/2016	Q15	Reed Bunting	Possible breeder	
14/06/2016	Q8	European Robin	Possible breeder	
14/06/2016	Q8	Winter Wren	Possible breeder	
14/06/2016	Q8	Willow Warbler	Possible breeder	
14/06/2016	Q8	Chaffinch	Possible breeder	
14/06/2016	Q8	Common Blackbird	Possible breeder	
14/06/2016	Q8	Common Whitethroat	Possible breeder	
14/06/2016	Q8	Song Thrush	Possible breeder	
14/06/2016	Q16	Sky Lark	Possible breeder	
14/06/2016	Q16	Winter Wren	Possible breeder	
14/06/2016	Q16	Song Thrush	Possible breeder	
14/06/2016	Q16	Common Whitethroat	Possible breeder	
14/06/2016	Q16	Meadow Pipit	Possible breeder	
14/06/2016	Q27	Chaffinch	Possible breeder	
14/06/2016	Q27	Sky Lark	Possible breeder	

Date	Quadrat	Species	Breeding status	Comments
14/06/2016	Q27	Reed Bunting	Possible breeder	
14/06/2016	Q27	Common Whitethroat	Possible breeder	
14/06/2016	Q27	Common Blackbird	Confirmed breeder	
14/06/2016	Q27	Common Pheasant	Possible breeder	
14/06/2016	Q27	Winter Wren	Possible breeder	
14/06/2016	Q27	Hooded Crow	Non-breeding	
14/06/2016	Q27	Meadow Pipit	Confirmed breeder	
14/06/2016	Q27	Dunnock	Possible breeder	
14/06/2016	Q27	Sedge Warbler	Possible breeder	
14/06/2016	Q27	Common Wood Pigeon	Possible breeder	
14/06/2016	Q27	Song Thrush	Possible breeder	
14/06/2016	Q27	European Robin	Possible breeder	
14/06/2016	Q27	Willow Warbler	Possible breeder	
14/06/2016	Q27	Lesser Redpoll	Possible breeder	
14/06/2016	Q38	Meadow Pipit	Possible breeder	
14/06/2016	Q38	Sky Lark	Possible breeder	
14/06/2016	Q39	Sky Lark	Confirmed breeder	
14/06/2016	Q39	Meadow Pipit	Possible breeder	
14/06/2016	Q39	Common Whitethroat	Possible breeder	
14/06/2016	Q39	Common Pheasant	Possible breeder	
14/06/2016	Q39	European Robin	Possible breeder	
14/06/2016	Q37	Sky Lark	Possible breeder	
14/06/2016	Q37	Meadow Pipit	Possible breeder	
14/06/2016	Q37	Sedge Warbler	Possible breeder	
14/06/2016	Q37	Common Blackbird	Possible breeder	
14/06/2016	Q37	Lesser Redpoll	Possible breeder	
14/06/2016	Q37	Reed Bunting	Possible breeder	
14/06/2016	Q37	European Robin	Possible breeder	
14/06/2016	Q28	Sky Lark	Possible breeder	
14/06/2016	Q28	Chaffinch	Possible breeder	
14/06/2016	Q28	European Robin	Possible breeder	
14/06/2016	Q28	Willow Warbler	Possible breeder	
14/06/2016	Q28	Reed Bunting	Possible breeder	
14/06/2016	Q28	Rook	Non-breeding	

Date	Quadrat	Species	Breeding status	Comments
14/06/2016	Q28	Meadow Pipit	Possible breeder	
14/06/2016	Q28	Winter Wren	Possible breeder	
14/06/2016	Q28	Common Whitethroat	Possible breeder	
14/06/2016	Q26	Song Thrush	Possible breeder	
14/06/2016	Q26	Willow Warbler	Possible breeder	
14/06/2016	Q26	Common Blackbird	Possible breeder	
14/06/2016	Q26	Common Pheasant	Possible breeder	
14/06/2016	Q17	Sky Lark	Possible breeder	
14/06/2016	Q17	Meadow Pipit	Confirmed breeder	
14/06/2016	Q18	Sky Lark	Possible breeder	
14/06/2016	Q18	Meadow Pipit	Possible breeder	
14/06/2016	Q25	Sky Lark	Possible breeder	
14/06/2016	Q25	Meadow Pipit	Possible breeder	
14/06/2016	Q29	Common Blackbird	Possible breeder	
14/06/2016	Q29	Willow Warbler	Possible breeder	
14/06/2016	Q29	European Robin	Possible breeder	
14/06/2016	Q29	Chaffinch	Possible breeder	
14/06/2016	Q29	Sedge Warbler	Possible breeder	
14/06/2016	Q29	Reed Bunting	Possible breeder	
14/06/2016	Q36	Meadow Pipit	Possible breeder	
14/06/2016	Q36	Ringed Plover	Possible breeder	Pair emitting alarm call and staying in territory. No distraction display
14/06/2016	Q36	Sky Lark	Possible breeder	
14/06/2016	Q40	Meadow Pipit	Possible breeder	
14/06/2016	Q40	Sky Lark	Possible breeder	
14/06/2016	Q40	Pied Wagtail	Possible breeder	
15/06/2016	Q41	Common Whitethroat	Possible breeder	
15/06/2016	Q41	Meadow Pipit	Possible breeder	
15/06/2016	Q41	European Robin	Possible breeder	
15/06/2016	Q41	Common Blackbird	Possible breeder	
15/06/2016	Q41	Song Thrush	Possible breeder	
15/06/2016	Q35	Meadow Pipit	Possible breeder	
15/06/2016	Q35	Sky Lark	Possible breeder	
15/06/2016	Q35	European Robin	Possible breeder	

Date	Quadrat	Species	Breeding status	Comments
15/06/2016	Q30	Sky Lark	Possible breeder	
15/06/2016	Q30	Common Blackbird	Possible breeder	
15/06/2016	Q30	Meadow Pipit	Possible breeder	
15/06/2016	Q24	Meadow Pipit	Possible breeder	
15/06/2016	Q19	European Robin	Possible breeder	
15/06/2016	Q19	Meadow Pipit	Possible breeder	
15/06/2016	Q19	Willow Warbler	Possible breeder	
15/06/2016	Q20	Pied Wagtail	Possible breeder	
15/06/2016	Q20	Winter Wren	Possible breeder	
15/06/2016	Q20	European Robin	Possible breeder	
15/06/2016	Q20	Willow Warbler	Possible breeder	
15/06/2016	Q20	Meadow Pipit	Possible breeder	
15/06/2016	Q34	Northern Lapwing	Possible breeder	Single bird. No display of sign of agitation
15/06/2016	Q34	Meadow Pipit	Possible breeder	
15/06/2016	Q34	Winter Wren	Possible breeder	
15/06/2016	Q42	European Robin	Possible breeder	
15/06/2016	Q42	Common Blackbird	Possible breeder	
15/06/2016	Q42	Meadow Pipit	Possible breeder	
15/06/2016	Q42	Song Thrush	Possible breeder	
15/06/2016	Q42	Willow Warbler	Possible breeder	
15/06/2016	Q42	Chaffinch	Possible breeder	
15/06/2016	Q43	Willow Warbler	Possible breeder	
15/06/2016	Q43	Meadow Pipit	Possible breeder	
15/06/2016	Q43	Chaffinch	Possible breeder	
15/06/2016	Q43	Winter Wren	Possible breeder	
15/06/2016	Q33	Meadow Pipit	Possible breeder	
15/06/2016	Q33	Sky Lark	Possible breeder	
15/06/2016	Q32	Meadow Pipit	Possible breeder	
15/06/2016	Q32	Sky Lark	Possible breeder	
15/06/2016	Q32	European Robin	Possible breeder	
15/06/2016	Q32	Winter Wren	Possible breeder	
15/06/2016	Q32	Willow Warbler	Possible breeder	
15/06/2016	Q32	Chaffinch	Possible breeder	
15/06/2016	Q22	Willow Warbler	Possible breeder	

Date	Quadrat	Species	Breeding status	Comments
15/06/2016	Q22	Common Whitethroat	Possible breeder	
15/06/2016	Q22	European Robin	Confirmed breeder	
15/06/2016	Q22	Common Blackbird	Confirmed breeder	
15/06/2016	Q22	Song Thrush	Possible breeder	
15/06/2016	Q22	Sedge Warbler	Possible breeder	
15/06/2016	Q22	Mistle Thrush	Possible breeder	
15/06/2016	Q21	Willow Warbler	Possible breeder	
15/06/2016	Q21	Common Bullfinch	Possible breeder	
15/06/2016	Q21	Common Blackbird	Confirmed breeder	
15/06/2016	Q21	European Robin	Possible breeder	
15/06/2016	Q21	Common Whitethroat	Possible breeder	
15/06/2016	Q21	Common Linnet	Possible breeder	
15/06/2016	Q21	Lesser Redpoll	Possible breeder	
15/06/2016	Q21	Stonechat	Confirmed breeder	
15/06/2016	Q21	Pied Wagtail	Confirmed breeder	
12/07/2016	Q1	Winter Wren	Confirmed breeder	
12/07/2016	Q1	Blackcap	Probable breeder	
12/07/2016	Q1	Common Whitethroat	Probable breeder	
12/07/2016	Q1	Chaffinch	Confirmed breeder	
12/07/2016	Q1	Meadow Pipit	Confirmed breeder	
12/07/2016	Q1	Song Thrush	Probable breeder	
12/07/2016	Q1	European Robin	Confirmed breeder	
12/07/2016	Q1	Common Blackbird	Probable breeder	
12/07/2016	Q1	Stonechat	Confirmed breeder	
12/07/2016	Q4	Chaffinch	Probable breeder	
12/07/2016	Q4	European Robin	Probable breeder	
12/07/2016	Q4	Meadow Pipit	Confirmed breeder	
12/07/2016	Q4	Long-tailed Tit	Confirmed breeder	
12/07/2016	Q4	Reed Bunting	Probable breeder	
12/07/2016	Q4	Winter Wren	Probable breeder	
12/07/2016	Q4	Common Blackbird	Probable breeder	
12/07/2016	Q4	Willow Warbler	Probable breeder	
12/07/2016	Q4	Reed Bunting	Probable breeder	
12/07/2016	Q11	Meadow Pipit	Confirmed breeder	

Date	Quadrat	Species	Breeding status	Comments
12/07/2016	Q11	Winter Wren	Confirmed breeder	
12/07/2016	Q11	Reed Bunting	Probable breeder	
12/07/2016	Q11	Lesser Redpoll	Possible breeder	
12/07/2016	Q11	Reed Bunting	Probable breeder	
12/07/2016	Q11	Willow Warbler	Probable breeder	
12/07/2016	Q11	European Robin	Confirmed breeder	
12/07/2016	Q11	Chaffinch	Confirmed breeder	
12/07/2016	Q11	Sedge Warbler	Probable breeder	
12/07/2016	Q11	Sky Lark	Probable breeder	
12/07/2016	Q12	Meadow Pipit	Confirmed breeder	
12/07/2016	Q12	Sky Lark	Probable breeder	
12/07/2016	Q12	Willow Warbler	Probable breeder	
12/07/2016	Q12	Grey Heron	Non-breeding	Flying from drain across peat in SW direction
12/07/2016	Q12	Ringed Plover	Confirmed breeder	Pair of RP. Male performs distraction display indicative of chicks present, though not observed in the young fen habitat.
12/07/2016	Q5	Winter Wren	Confirmed breeder	
12/07/2016	Q5	Common Blackbird	Confirmed breeder	
12/07/2016	Q5	European Robin	Confirmed breeder	
12/07/2016	Q5	Willow Warbler	Probable breeder	
12/07/2016	Q5	Reed Bunting	Probable breeder	
12/07/2016	Q5	Common Whitethroat	Probable breeder	
12/07/2016	Q5	Great Tit	Confirmed breeder	
12/07/2016	Q5	Mistle Thrush	Possible breeder	
12/07/2016	Q5	Common Linnet	Probable breeder	
12/07/2016	Q5	Long-tailed Tit	Possible breeder	
12/07/2016	Q5	Chaffinch	Confirmed breeder	
12/07/2016	Q5	Northern Lapwing	Confirmed breeder	One Adult and one Juvenile (recently fledged). Adult alarm calling and juvenile flying away from surveyor [FL]
12/07/2016	Q2	Mistle Thrush	Possible breeder	
12/07/2016	Q2	European Robin	Confirmed breeder	
12/07/2016	Q2	Willow Warbler	Probable breeder	
12/07/2016	Q2	Reed Bunting	Probable breeder	

Date	Quadrat	Species	Breeding status	Comments
12/07/2016	Q2	Winter Wren	Confirmed breeder	
12/07/2016	Q2	Common Blackbird	Probable breeder	
12/07/2016	Q2	Sky Lark	Probable breeder	
12/07/2016	Q2	Great Tit	Probable breeder	
12/07/2016	Q2	Common Linnet	Probable breeder	
12/07/2016	Q3	Blue Tit	Probable breeder	
12/07/2016	Q3	Winter Wren	Probable breeder	
12/07/2016	Q3	Meadow Pipit	Confirmed breeder	
12/07/2016	Q3	Common Blackbird	Probable breeder	
12/07/2016	Q3	Common Whitethroat	Probable breeder	
12/07/2016	Q3	European Robin	Confirmed breeder	
12/07/2016	Q3	Great Tit	Confirmed breeder	
12/07/2016	Q3	Common Bullfinch	Probable breeder	
12/07/2016	Q3	European Goldfinch	Possible breeder	
12/07/2016	Q3	Common Linnet	Probable breeder	
12/07/2016	Q3	Lesser Redpoll	Possible breeder	
12/07/2016	Q6	Meadow Pipit	Confirmed breeder	
12/07/2016	Q6	Sky Lark	Probable breeder	
12/07/2016	Q6	Common Snipe	Possible breeder	Flushed from drain - No drumming or chipping (H)
12/07/2016	Q6	European Robin	Probable breeder	
12/07/2016	Q6	Willow Warbler	Probable breeder	
12/07/2016	Q6	Northern Lapwing	Confirmed breeder	Adult with 2 Juveniles. Adult alarm calling with Juveniles close by (FL)
12/07/2016	Q6	Common Blackbird	Probable breeder	
12/07/2016	Q10	Hen Harrier	Non-breeding	A ringtail observed perched on bare peat among birch and willow scrub before hunting in S direction over scrub.
12/07/2016	Q10	Meadow Pipit	Confirmed breeder	
12/07/2016	Q10	Sky Lark	Confirmed breeder	
12/07/2016	Q10	Willow Warbler	Probable breeder	
12/07/2016	Q10	Reed Bunting	Probable breeder	
12/07/2016	Q13	Meadow Pipit	Probable breeder	
12/07/2016	Q13	Willow Warbler	Probable breeder	
12/07/2016	Q13	Sky Lark	Probable breeder	

Date	Quadrat	Species	Breeding status	Comments
12/07/2016	Q13	Winter Wren	Probable breeder	
12/07/2016	Q13	Chaffinch	Probable breeder	
12/07/2016	Q13	Common Linnet	Probable breeder	
12/07/2016	Q14	Northern Lapwing	Possible breeder	Adult flying N. No calling or display (H)
12/07/2016	Q14	Willow Warbler	Probable breeder	
12/07/2016	Q14	Sky Lark	Probable breeder	
12/07/2016	Q14	Meadow Pipit	Confirmed breeder	
12/07/2016	Q14	Willow Warbler	Confirmed breeder	
12/07/2016	Q14	Reed Bunting	Confirmed breeder	
12/07/2016	Q14	Great Tit	Confirmed breeder	
12/07/2016	Q14	Common Blackbird	Probable breeder	
12/07/2016	Q14	European Robin	Probable breeder	
12/07/2016	Q9	Northern Lapwing	Confirmed breeder	One adult and one Juvenile (recently fledged) observed in birch and willow scrub on bare peat before rising and flying S. (FL)
12/07/2016	Q9	Northern Lapwing	Confirmed breeder	Recently fledged L in cover of birch and willow scrub on peat mound. Calling but did not rise and fly away. Probably belonged to L in Ref. 1 above. (FL)
12/07/2016	Q9	Common Snipe	Possible breeder	Flused from drain. No chipping/ drumming (H)
12/07/2016	Q9	European Robin	Probable breeder	
12/07/2016	Q9	Reed Bunting	Probable breeder	
12/07/2016	Q9	Sky Lark	Probable breeder	
12/07/2016	Q9	Meadow Pipit	Probable breeder	
12/07/2016	Q9	Winter Wren	Probable breeder	
12/07/2016	Q7	Great Tit	Probable breeder	
12/07/2016	Q7	Winter Wren	Confirmed breeder	
12/07/2016	Q7	Meadow Pipit	Confirmed breeder	
12/07/2016	Q7	Mistle Thrush	Possible breeder	
12/07/2016	Q7	Willow Warbler	Confirmed breeder	
12/07/2016	Q7	Reed Bunting	Confirmed breeder	
12/07/2016	Q7	Sky Lark	Probable breeder	
12/07/2016	Q7	Chaffinch	Probable breeder	
12/07/2016	Q7	Common Whitethroat	Probable breeder	
12/07/2016	Q8	Long-tailed Tit	Possible breeder	

Date	Quadrat	Species	Breeding status	Comments
12/07/2016	Q8	Winter Wren	Probable breeder	
12/07/2016	Q8	Meadow Pipit	Confirmed breeder	
12/07/2016	Q8	Mistle Thrush	Possible breeder	
12/07/2016	Q8	Willow Warbler	Probable breeder	
12/07/2016	Q8	Common Blackbird	Probable breeder	
12/07/2016	Q8	Blackcap	Possible breeder	
12/07/2016	Q8	Chaffinch	Probable breeder	
12/07/2016	Q8	Blue Tit	Probable breeder	
12/07/2016	Q15	Willow Warbler	Probable breeder	
12/07/2016	Q15	Sky Lark	Probable breeder	
12/07/2016	Q15	Meadow Pipit	Confirmed breeder	
12/07/2016	Q15	Reed Bunting	Probable breeder	
12/07/2016	Q16	Meadow Pipit	Probable breeder	
12/07/2016	Q16	Winter Wren	Probable breeder	
12/07/2016	Q16	Sky Lark	Probable breeder	
12/07/2016	Q27	Meadow Pipit	Confirmed breeder	
12/07/2016	Q27	Sky Lark	Confirmed breeder	
12/07/2016	Q27	Dunnock	Probable breeder	
12/07/2016	Q27	Chaffinch	Probable breeder	
12/07/2016	Q27	Sedge Warbler	Probable breeder	
12/07/2016	Q27	European Robin	Confirmed breeder	
12/07/2016	Q27	Willow Warbler	Probable breeder	
12/07/2016	Q27	Common Whitethroat	Probable breeder	
12/07/2016	Q27	Blackcap	Possible breeder	
12/07/2016	Q27	Song Thrush	Probable breeder	
12/07/2016	Q27	Common Linnet	Possible breeder	
12/07/2016	Q38	Common Buzzard	Possible breeder	Adult hunting over raised bog and grassland and cutover (H)
12/07/2016	Q38	Meadow Pipit	Probable breeder	
12/07/2016	Q38	Sky Lark	Probable breeder	
12/07/2016	Q39	Meadow Pipit	Probable breeder	
12/07/2016	Q39	Sky Lark	Probable breeder	
12/07/2016	Q37	Meadow Pipit	Confirmed breeder	
12/07/2016	Q37	Sky Lark	Probable breeder	

Date	Quadrat	Species	Breeding status	Comments
12/07/2016	Q37	Reed Bunting	Probable breeder	
12/07/2016	Q37	Sedge Warbler	Probable breeder	
12/07/2016	Q37	European Robin	Probable breeder	
12/07/2016	Q28	European Robin	Confirmed breeder	
12/07/2016	Q28	Chaffinch	Confirmed breeder	
12/07/2016	Q28	Common Whitethroat	Probable breeder	
12/07/2016	Q28	Meadow Pipit	Probable breeder	
12/07/2016	Q28	Reed Bunting	Probable breeder	
12/07/2016	Q26	Great Tit	Probable breeder	
12/07/2016	Q26	Willow Warbler	Probable breeder	
12/07/2016	Q26	European Robin	Probable breeder	
12/07/2016	Q26	Winter Wren	Probable breeder	
12/07/2016	Q17	Northern Lapwing	Possible breeder	Three adults observed on bare peat before flying N across site (H)
12/07/2016	Q17	Meadow Pipit	Probable breeder	
12/07/2016	Q17	Hooded Crow	Non-breeding	
12/07/2016	Q17	Sky Lark	Probable breeder	
12/07/2016	Q18	Sky Lark	Probable breeder	
12/07/2016	Q25	Meadow Pipit	Probable breeder	
12/07/2016	Q29	Willow Warbler	Probable breeder	
12/07/2016	Q29	Sedge Warbler	Probable breeder	
12/07/2016	Q29	Reed Bunting	Probable breeder	
12/07/2016	Q36	Peregrine Falcon	Confirmed breeder	One adult and juvenile perched on top of peat mound before flying N over track and scrub and bare peat (FL)
12/07/2016	Q36	Ringed Plover	Confirmed breeder	Adult calling from fen vegetation with chick nearby (approximately two weeks old) (FL)
12/07/2016	Q36	Meadow Pipit	Probable breeder	
12/07/2016	Q36	Sky Lark	Probable breeder	
12/07/2016	Q40	Meadow Pipit	Confirmed breeder	
12/07/2016	Q40	Sky Lark	Probable breeder	
12/07/2016	Q41	Winter Wren	Probable breeder	
12/07/2016	Q41	Great Tit	Probable breeder	
12/07/2016	Q41	Meadow Pipit	Confirmed breeder	

Date	Quadrat	Species	Breeding status	Comments
12/07/2016	Q41	Chaffinch	Probable breeder	
12/07/2016	Q41	Pied Wagtail	Possible breeder	
12/07/2016	Q41	European Robin	Possible breeder	
12/07/2016	Q35	Meadow Pipit	Probable breeder	
12/07/2016	Q30	Winter Wren	Probable breeder	
12/07/2016	Q30	Meadow Pipit	Probable breeder	
12/07/2016	Q30	Willow Warbler	Probable breeder	
12/07/2016	Q24	Grey Heron	Non-breeding	Flying from drain to E of site.
12/07/2016	Q19	Meadow Pipit	Confirmed breeder	
12/07/2016	Q19	Sky Lark	Probable breeder	
12/07/2016	Q42	Meadow Pipit	Probable breeder	
12/07/2016	Q42	Willow Warbler	Probable breeder	
12/07/2016	Q42	Chaffinch	Probable breeder	
12/07/2016	Q42	Great Tit	Probable breeder	
12/07/2016	Q42	Winter Wren	Confirmed breeder	
12/07/2016	Q43	European Robin	Probable breeder	
12/07/2016	Q43	Meadow Pipit	Probable breeder	
12/07/2016	Q43	Pied Wagtail	Possible breeder	
12/07/2016	Q43	Winter Wren	Probable breeder	
12/07/2016	Q43	Blue Tit	Probable breeder	
12/07/2016	Q43	Great Tit	Probable breeder	
12/07/2016	Q32	Sky Lark	Probable breeder	
12/07/2016	Q32	Willow Warbler	Probable breeder	
12/07/2016	Q32	Winter Wren	Probable breeder	
12/07/2016	Q22	Winter Wren	Probable breeder	
12/07/2016	Q22	Willow Warbler	Probable breeder	
12/07/2016	Q22	Chaffinch	Probable breeder	
12/07/2016	Q22	Song Thrush	Probable breeder	
12/07/2016	Q22	Common Blackbird	Confirmed breeder	
12/07/2016	Q22	Reed Bunting	Confirmed breeder	
12/07/2016	Q21	Common Whitethroat	Probable breeder	
12/07/2016	Q21	Willow Warbler	Confirmed breeder	
12/07/2016	Q21	Lesser Redpoll	Possible breeder	
12/07/2016	Q21	Long-tailed Tit	Possible breeder	

Date	Quadrat	Species	Breeding status	Comments
12/07/2016	Q21	European Robin	Probable breeder	
12/07/2016	Q21	Great Tit	Probable breeder	
12/07/2016	Q21	Common Blackbird	Confirmed breeder	
31/08/2016	Q1	Common Buzzard	Probable breeder	Family group flying between cutover bog and woodland at bog edge (FL)
31/08/2016	Q1	Meadow Pipit	Probable breeder	
31/08/2016	Q1	Song Thrush	Probable breeder	
31/08/2016	Q1	European Robin	Probable breeder	
31/08/2016	Q1	Common Blackbird	Probable breeder	
31/08/2016	Q1	Mistle Thrush	Probable breeder	
31/08/2016	Q1	Common Whitethroat	Probable breeder	
31/08/2016	Q4	Chaffinch	Probable breeder	
31/08/2016	Q4	Winter Wren	Probable breeder	
31/08/2016	Q4	European Robin	Probable breeder	
31/08/2016	Q4	Meadow Pipit	Probable breeder	
31/08/2016	Q4	Common Blackbird	Probable breeder	
31/08/2016	Q12	Meadow Pipit	Probable breeder	
31/08/2016	Q12	Common Kestrel	Probable breeder	Hunting over fen and cutover bog (female)
31/08/2016	Q12	Sky Lark	Probable breeder	
31/08/2016	Q5	Winter Wren	Probable breeder	
31/08/2016	Q5	Common Blackbird	Probable breeder	
31/08/2016	Q5	European Robin	Probable breeder	
31/08/2016	Q5	Willow Warbler	Probable breeder	
31/08/2016	Q5	Reed Bunting	Probable breeder	
31/08/2016	Q5	Common Buzzard	Probable breeder	Single bird (probably from group in Q1) mobbed by rook over birch and willow scrub.
31/08/2016	Q2	European Robin	Probable breeder	
31/08/2016	Q2	Willow Warbler	Probable breeder	
31/08/2016	Q2	Reed Bunting	Probable breeder	
31/08/2016	Q2	Winter Wren	Probable breeder	
31/08/2016	Q2	Common Blackbird	Probable breeder	
31/08/2016	Q2	Great Tit	Probable breeder	
31/08/2016	Q3	Winter Wren	Probable breeder	
31/08/2016	Q3	Meadow Pipit	Probable breeder	

Date	Quadrat	Species	Breeding status	Comments
31/08/2016	Q3	Common Blackbird	Probable breeder	
31/08/2016	Q3	European Robin	Probable breeder	
31/08/2016	Q3	Great Tit	Probable breeder	
31/08/2016	Q6	Meadow Pipit	Confirmed breeder	
31/08/2016	Q6	Sky Lark	Probable breeder	
31/08/2016	Q6	Common Kestrel	Possible breeder	Male flying over birch and willow scrub and roadway. Agitated in behaviour - calling briefly (A)
31/08/2016	Q6	European Robin	Probable breeder	
31/08/2016	Q6	Willow Warbler	Probable breeder	
31/08/2016	Q6	Common Blackbird	Probable breeder	
31/08/2016	Q10	Meadow Pipit	Probable breeder	
31/08/2016	Q10	Sky Lark	Probable breeder	
31/08/2016	Q10	Willow Warbler	Probable breeder	
31/08/2016	Q10	Reed Bunting	Probable breeder	
31/08/2016	Q13	Meadow Pipit	Probable breeder	
31/08/2016	Q13	Sky Lark	Probable breeder	
31/08/2016	Q13	Winter Wren	Probable breeder	
31/08/2016	Q14	Sky Lark	Probable breeder	
31/08/2016	Q14	Meadow Pipit	Probable breeder	
31/08/2016	Q14	Reed Bunting	Probable breeder	
31/08/2016	Q14	European Robin	Probable breeder	
31/08/2016	Q9	European Robin	Probable breeder	
31/08/2016	Q9	Sky Lark	Probable breeder	
31/08/2016	Q9	Meadow Pipit	Probable breeder	
31/08/2016	Q9	Winter Wren	Probable breeder	
31/08/2016	Q7	Great Tit	Probable breeder	
31/08/2016	Q7	Winter Wren	Probable breeder	
31/08/2016	Q7	Meadow Pipit	Probable breeder	
31/08/2016	Q7	Reed Bunting	Probable breeder	
31/08/2016	Q26	European Robin	Probable breeder	
31/08/2016	Q26	Reed Bunting	Probable breeder	
31/08/2016	Q26	Winter Wren	Probable breeder	
31/08/2016	Q26	Great Tit	Probable breeder	
31/08/2016	Q17	Meadow Pipit	Probable breeder	

Date	Quadrat	Species	Breeding status	Comments
31/08/2016	Q17	Reed Bunting	Probable breeder	
31/08/2016	Q17	Sky Lark	Probable breeder	
31/08/2016	Q36	Meadow Pipit	Probable breeder	
31/08/2016	Q36	Sky Lark	Probable breeder	
31/08/2016	Q40	Meadow Pipit	Confirmed breeder	
31/08/2016	Q40	Sky Lark	Probable breeder	
31/08/2016	Q41	Winter Wren	Probable breeder	
31/08/2016	Q41	European Robin	Probable breeder	
31/08/2016	Q35	Meadow Pipit	Probable breeder	
31/08/2016	Q35	Common Kestrel	Non-breeding	Male hunting over willow scrub and train track and cutover. Continued hunting through Q42
31/08/2016	Q30	Winter Wren	Probable breeder	
31/08/2016	Q30	Meadow Pipit	Probable breeder	
31/08/2016	Q42	European Robin	Probable breeder	
31/08/2016	Q42	Winter Wren	Probable breeder	
31/08/2016	Q43	European Robin	Probable breeder	
31/08/2016	Q43	Winter Wren	Probable breeder	
31/08/2016	Q43	Common Linnet	Possible breeder	

Habitat codes follow Fossitt (2000) A Guide to Habitats in Ireland. Kilkenny: The Heritage Council

**Table 6 targeted breeding raptor survey records – summer 2016**

Date	Time of observation	Species	Number of birds	Habitat and Activity
27/04/2016	12:30	Common Buzzard	1	Perched on a tree for 3mins before soaring in the air over agricultural fields and back to woodland. Flies at 10-25m, then rises to 25-175m, over WD2 (birch scrub) and GA1 (agricultural grassland). Some calling
27/04/2016	13:44	Common Buzzard	1	feeding on the ground before flying to perch in a tree for 20mins. Flies at 0-10m, then ascends to 10-25m over WL2 (treeline)
27/04/2016	16:17	Common Buzzard	1	soaring along woodland before landing within a group of trees for 5mins. Hunting rather than nesting. Recorded flying at 25-175m, ascends to over 175m, then descends again to 25-175m, down to 0-10m over WL2 (birch woodland)
27/04/2016	16:26	Common Buzzard	1	soaring for 6mins. Flying above 175m.

Date	Time of observation	Species	Number of birds	Habitat and Activity
27/04/2016	13:45	Common Kestrel	1	heard calling, but could not be located
27/04/2016	16:03	Common Kestrel	1	lying with purpose at a height of approximately 60m in a SW direction
27/04/2016	17:48	Common Kestrel	1	flying 10-25m over WL2 (treeline) and GA1 (agricultural grassland) being mobbed by Jackdaw for 1min and 30s
23/05/2016	18:11	Common Kestrel	1	hunting over scrub at outer boundary of cutover peat. Flying at 25-100m over WL2 (birch willow scrub)
23/05/2016	14:23	Peregrine Falcon	1	riding thermals over pasture, drifting over peat land and continuing out of view to the N. First half of flight 25-100m and second half of flight above 100m. Flies over GA1 (agricultural grassland) and PB4 (bare peat)
23/05/2016	17:23	Peregrine Falcon	1	observed riding thermals over powerstation. Bird returned to top of powerstation tower. 2mins later, left perch to fend off passing Grey Heron and returned to tower. Observed only perching, but possible nest site. Flying at 25-100m+ around powerstation (BL3)
13/06/2016	10:54	Common Buzzard		hunting over cutover peat, conifer plantation edge and rough grassland outside study area
13/06/2016	13:03	Common Kestrel		hunting over grassland and outer boundary of cutover peat outside study area
13/06/2016	12:36	Peregrine Falcon		hunting over grassland and cutover bog boundary. Flew out of view to the S outside study area
15/06/2016	14:26	Common Buzzard	1	hunting over cutover bog and grassland outside the study area
15/06/2016	14:58	Common Kestrel	1	hunting over cutover and remnant high bog and scrub over the study area boundary
15/06/2016	13:33	Peregrine Falcon	2	pair perching on top of chimney stack. Female on ring around tower and male perched on ladder fixing to tower
15/06/2016	13:58	Peregrine Falcon	1	male from ladder flew E and female on chimney stack calls briefly
15/06/2016	14:12	Peregrine Falcon	1	male from above returns and female on chimney stack leaves the site
15/06/2016	14:12	Peregrine Falcon	1	female flies E and calls
15/06/2016	14:18	Peregrine Falcon	1	female from above returns and calls continuously on return. Both male and female remain perched on powerstation
15/06/2016	14:39	Peregrine Falcon	2	male from earlier leaves to the E and female follows after. Male flies out of view while female circles the tower before landing on top of the tower again
15/06/2016	14:43	Peregrine Falcon	1	female circles the tower before landing on top of the power plant
15/06/2016	14:52	Peregrine Falcon	1	female returns to the top of the tower from the power plant. Pair remain perched and visible through and there is little evidence of tending to chicks or incubation
15/06/2016	15:27	Peregrine Falcon	1	male flies SE and soars on thermal hunting in SE direction outside the study area
15/06/2016	15:38	Peregrine Falcon	1	female leaves and circles tower while calling continuously

Date	Time of observation	Species	Number of birds	Habitat and Activity
15/06/2016	15:42	Peregrine Falcon	1	male returns and keeps distance from female while also circling the tower - note that circling behaviour around tower may be agitated behaviour as a result of workmen replacing damaged panes at the tower base
15/06/2016	15:48	Peregrine Falcon	1	female lands on the tower top once again and male flies E away over cutover peat
15/06/2016	15:57	Peregrine Falcon	1	male from above returns to join the female. Both perch, looking S and show no signs of tending of young or incubation
15/06/2016	16:21	Peregrine Falcon	2	female leaves perch and is soon joined by the male. Female circles the tower and the male keeps greater distance. Most likely as a result of men working on the tower base
08/07/2016	16:18	Common Buzzard	2	Two birds soaring above 175m for approx 7 mins. no calling or interaction (t)
08/07/2016	18:14	Common Buzzard	1	Hunting over grassland and flying over conifer plantation (h)
08/07/2016	17:33	Peregrine Falcon	1	Recently fledged young bird observed on top of peat row before flying at between 10-30m height in sw direction (fl)
12/07/2016	16:18	Common Buzzard	1	In territorial dispute with map ref 2. (t)
12/07/2016	16:18	Common Buzzard	1	In territorial dispute with map ref 2. (t)
12/07/2016	18:47	Common Buzzard	1	Adult carrying prey item into area of deciduous trees to possible nest site (ff)
12/07/2016	18:53	Common Buzzard	1	Adult hunting over raised bog, cutover and scrub
12/07/2016	18:26	Peregrine Falcon	2	Adult and juvenile on top of peat row and leaving perch to fly n over bare peat and scrub

Habitat codes follow Fossitt (2000) A Guide to Habitats in Ireland. Kilkenny: The Heritage Council

# Cloncreen Wind Farm Development

## Post-construction Bird Monitoring Programme



Planning & Environmental Consultants

## DOCUMENT DETAILS

**Client:** Bord na Móna

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# 1 INTRODUCTION

This Bird Monitoring Programme has been prepared by McCarthy Keville O’Sullivan for the proposed wind farm development at Cloncreen, Co. Offaly. This document provides a timeframe and monitoring schedule for the bird population of the study area at Cloncreen during the post-construction phase of the project. Breeding and winter bird surveys were undertaken during the period October 2012 to June 2016 encompassing autumn and spring migration periods. The surveys undertaken to date have informed the various proposed bird monitoring measures outlined in this document.

## 1.1 Target Species and Birds of Conservation Concern

The following main target species and birds of high conservation concern (BoCCI (Birds of Conservation Concern in Ireland) red listed species and bird species listed on Annex I of the EU Birds Directive) were recorded within the study area during field surveys from October 2012 to June 2016. Table 1.1 summarises the bird species of conservation concern recorded within the study area during field surveys.

**Table 1.1 Birds of high conservation concern recorded during field surveys undertaken at the proposed development site at Cloncreen, Co. Offaly.**

Common Name	Latin Name	Conservation Status
Whooper Swan	<i>Cygnus cygnus</i>	Annex I, EU Birds Directive
Golden Plover	<i>Pluvialis apricaria</i>	BoCCI Red List; Annex I, EU Birds Directive
Lapwing	<i>Vanellus vanellus</i>	BoCCI Red List
Woodcock	<i>Scolopax rusticola</i>	BoCCI Red List
Peregrine Falcon	<i>Falco peregrinus</i>	Annex I, EU Birds Directive
Hen Harrier	<i>Circus cyaneus</i>	Annex I, EU Birds Directive

## 1.2 Objectives

This document has been prepared having regard to the following objectives:

- To record usage of the site by birds and interaction with operating turbines during post-construction phase of the development.
- To monitor short-term and long-term effects on bird populations with a particular emphasis on wintering and breeding birds deemed to be of high conservation concern (Annex I; EU Birds Directive and BoCCI red list species).
- To undertake collision monitoring and corpse searches for potential bird fatalities as a result of collision with turbine blades.
- Report on findings of post construction monitoring at the end of each monitoring year (Year 1, 2, 3, 5, 10 & 15 of the life time of the wind farm).

## **2 METHODOLOGY**

Survey methods employed for post-construction monitoring will be in line with guidelines issued by the Scottish Natural Heritage (SNH) (2009). Post-construction monitoring will be undertaken in Years 1, 2, 3, 5, 10 and 15 of the life time of the wind farm.

Post-construction monitoring will include ongoing breeding bird surveys, winter surveys, waterbird counts and a programme of regular corpse searching of birds that may potentially collide with operating turbines during the operational phase of the wind farm project.

Bird monitoring will include the following survey methods:

- Breeding Bird Surveys
- Vantage Point Surveys (with an emphasis on migratory waterfowl during the autumn migration/wintering survey period)
- Targeted bird collision surveys (corpse searches)
- Waterbird Counts (August to May inclusive)

### **2.1 Breeding Bird Surveys**

Post-construction breeding bird surveys will incorporate a combination of Adapted Brown & Shepherd surveys and transect surveys (Bibby et al., 2000) similar to those methods employed for baseline EIS surveys and allow a comparison of data to be made for each monitoring year. A total of four visits will be undertaken during the bird breeding season for each monitoring year and timed to coincide with the survey period April - July. Notes will be recorded on nesting and territorial behaviour and breeding signs using standard BTO codes. Non-breeding behaviour such as birds flying over the site will also be recorded.

In addition, shortened vantage point watches will be incorporated into the survey for breeding raptors in line with Hardey et al., (2009). Aural and visual registrations will be recorded during field surveys. Evidence of breeding birds and associated breeding territories (with a particular emphasis on birds of conservation concern) will be recorded.

### **2.2 Wintering Bird Surveys**

#### **2.2.1 Vantage Point Surveys**

The SNH (2009) guidelines recommend undertaking a standardised area base search as the most appropriate method of post-construction monitoring of wintering birds. To determine post-construction effects on wintering birds, vantage point watches will be undertaken at the proposed development site. Vantage point surveys will be timed to coincide with the winter survey period (September to March inclusive) with an emphasis on wintering/migratory waterfowl (i.e. migratory swans, geese, Golden Plover, etc.) for each monitoring year. Methodology for vantage point watches will follow guidelines issued by the SNH (2009) & SNH (2014). Survey work will be distributed over the autumn migration (September to November inclusive) and winter survey (October to March inclusive) period. The proposed vantage point watches will adhere to a minimum of 36 hours/VP during the autumn migration/winter survey

season as per guidelines issued by SNH. Monthly visits will be undertaken between September and March inclusive. During each visit, six hour vantage point watches will be undertaken from a fixed vantage point location that offers an un-interrupted view of the study area. Vantage points will be undertaken from the same locations that pre-planning surveys were undertaken (VP1, VP2 & VP4/5). Vantage point surveys will be timed to encompass periods of dawn and dusk when bird activity is highest. Behavioural categories for the observation of bird interactions with operational wind farms will be in line with terminology outlined by Meredith et al., (2002).

## **2.3 Collision Searches (Bird Casualties)**

Surveys for bird casualties will follow survey methods broadly based on guidelines issued by the Scottish Natural Heritage (2009) and search methods adopted by Duffy & Steward (2008). It is proposed to undertake a minimum of twelve visits over a 12 month period at the site for each monitoring year. During each visit, searches will be undertaken at each operating turbine location by a team of two surveyors. A plot measuring 130m x 130m from the centre of each turbine location will be the subject of target searches for bird casualties. Searches will incorporate the use of transects spaced at 10m intervals apart with the observer covering 5m on either side for each transect. Locations and coordinates of transect routes will be confirmed using a portable GPS recording device. Recording sheets will be used to document bird carcasses encountered in the field. The following details will be considered during field surveys: GPS location of each bird carcass, photographic record, carcass condition (intact (carcass that is completely intact or not badly composed), scavenged (evidence that the carcass was fed upon by a scavenger/predator) or feather patch (ten or more feathers indicating predation or scavenging or two or more primary feathers must be present to consider the carcass a casualty)), distance from the turbine location, date, time, etc.

Results of bird casualties will be issued in a final report at the end of each monitoring year.

## **2.4 Wetland Waterbird Counts**

Wetland waterbird counts/roost surveys will be undertaken at wetland sites concentrated along the Philipstown and Figile Rivers and Ballycon within a 3 kilometre radius of the study area. Particular emphasis will be placed on migratory waterfowl and suitable foraging pastures adjacent to natural watercourses. Records of numbers of wildfowl or wader species, presence of marked birds (leg-ringed or neck-collared), weather conditions and habitat types will be noted during field surveys. It is proposed to undertake surveys on a monthly basis from August to May inclusive broadly based on SNH (2014) and Gilbert et al., (1998).

### 3 TIMEFRAME OF PROPOSED MONITORING WORKS

Bird monitoring surveys will be undertaken during years 1, 2, 3, 5, 10 & 15.

To summarise, breeding bird surveys (Brown & Shepherd surveys/walked transect surveys/targeted raptor surveys) will be undertaken on four occasions (April – July) for each monitoring year, a minimum coverage of 36 hours of vantage point watches undertaken during the autumn migration/wintering survey season (monthly visits from September to March inclusive), wetland waterbird counts (August to May inclusive) and bird collision searches (1 visit/month over a 12 month period for each monitoring year).

**Table 3.1 Proposed bird monitoring work schedule for each monitoring year for the proposed wind farm development at Cloncreen, Co. Offaly.**

Survey Type	Phase	Period	No. of Visits	Survey Method
Breeding Bird Survey	Year 1, 2, 3, 4, 5, 10 & 15	April - July	4 visits / monitoring year	Adapted Brown & Shepherd Survey/Walked transect/Raptor Survey
Autumn Migration/Wintering Birds Survey	Year 1, 2, 3, 4, 5, 10 & 15	September - March	7 visits / monitoring year	Vantage Point Surveys
Corpse Searches (Bird Casualties)	Year 1, 2, 3, 4, 5, 10 & 15	January - December	1 visit/month for each monitoring year	Targeted corpse searches at turbine bases
Wetland Waterbird Counts	Year 1, 2, 3, 4, 5, 10 & 15	August – May	1 visit/month for each monitoring year	Waterbird Counts

### 4 REPORTING

A report summarising the findings of the bird monitoring surveys will be submitted to the Planning Authority at the end of each monitoring year. This will provide details of the various methods employed, the results of field surveys (breeding, winter, vantage point watches, corpse searches, etc.), potential effects/impacts on birds and any recommendations that may inform additional mitigation measures during the operational phase of the wind farm project. Maps outlining flight lines of key target species will be produced using GIS software applications to accompany the final report at the end of each monitoring year. Special attention will be paid to birds of high conservation concern (including wintering waterfowl, breeding waders, raptors, etc.).

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# Collision Risk Assessment

Cloncreen Wind Farm, Co. Offaly



Planning & Environmental Consultants

## DOCUMENT DETAILS

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# 1 INTRODUCTION

This document has been prepared by McCarthy Keville O'Sullivan Ltd to assess the collision risk for birds at Cloncreen Wind Farm, Co. Offaly. The collision risk assessment, prepared by Dr. Chris Peppiatt (BSc, PhD, MCIEEM), is based on vantage point watch surveys undertaken at the site of the proposed development from October 2013 to March 2014 and from March 2015 to August 2016.

Collision risk modelling uses mathematical modelling to predict the numbers of individuals of a bird species that may be killed by collision with moving wind turbine rotor blades. The modelling method used in this collision risk calculation follows Band *et al.* (2007), hereafter referred to as "the Band Model".

Flight data obtained from vantage point surveys may be incorporated into a model such as the Band model to determine the theoretical collision risk for target species at a wind farm.

Two main stages are involved in the model:

- Stage 1: Determination of the number of birds or flights passing through the air space swept by the rotor blades of the wind turbines
- Stage 2 Calculation of the probability of a bird strike occurring.

The product of Stage 1 and Stage 2 gives a theoretical annual collision mortality rate on the assumption that birds make no attempt to avoid colliding with turbines.

There is a paucity of empirical collision evidence for individual bird species and therefore the value of the modelling for impact assessment is likely to be limited. To date empirical evidence indicates that avoidance rates are well in excess of 95% *e.g.* Fernley, Lowther & Whitfield, 2006, Scottish Natural Heritage (SNH) 2010b). The Band model, which is recommended by SNH, has been the subject of academic (*e.g.* Chamberlain *et al.*, 2005 & 2006, Madders & Whitfield 2006, Drewitt & Langston 2006, Fernley, Lowther & Whitfield 2006) and its results must be interpreted with a degree of caution.

For a number of years SNH advocated a highly precautionary approach, recommending a value of 95% as an avoidance rate (Band *et al.*, 2007). However, based on empirical evidence precautionary rates have now been increased to 98-99% or higher in most cases.

## 2 METHODOLOGY

The steps used to derive the collision risk for the proposed development according to the Band Model are outlined below:

- (1) Stage 1 (Band): the model uses observations of birds flying through the study area during vantage point surveys to calculate the number of birds estimated to fly through the proposed turbines.
- (2) Stage 2 (Band): the model calculates the collision risk for an individual bird flying through a rotating turbine. The collision risk varies from species to species, depending on body length, wingspan, flapping rate and flight speed. Bird biometrics are available from the British Trust of Ornithology (BTO) online bird collision risk guidance.
- (3) The product of the number of birds calculated to fly through the turbines in a year and the risk that a bird doing so will collide with the moving blades gives the worst case scenario for collision mortality. The worst case scenario assumes that birds flying towards the turbines make no attempt to avoid them.
- (4) An avoidance factor is applied to the results to account for avoidance of the turbines by birds in flight. This corrects for the ability of the birds to detect and manoeuvre around the turbines. Avoidance rates are available from SNH online bird collision risk guidance.
- (5) Finally, a figure for the average downtime of the turbines is applied. This accounts for wind speeds unsuitable for turbine rotation and maintenance downtime (in the case of the subject site, maintenance downtime has been taken at 85% in line with parameters adopted for Scottish wind farm cases). The final output is a real-world estimation of the number of collisions that may occur at the wind farm.

The Band Method makes a number of assumptions on the biometrics of birds and the turbine design. These are:

- Birds are assumed to be of a simple cruciform shape
- Turbine blades are assumed to have width and pitch angle, but no thickness
- Birds fly through turbines in straight lines
- Bird flight is not affected by the slipstream of the turbine blade
- Because the model assumes that no action is taken by a bird to avoid collision, it is recognised that the collision risk figures derived are purely theoretical and represent worst case estimates.

A number of assumptions were made in the calculation of collision risk at Cloncreen Wind Farm. These assumptions are tailored specifically to Cloncreen Wind Farm and are as follows:

- Birds in flight within the study area at heights between 25m and 175m are assumed to be in danger of collision with the rotating turbine blades.
- Avoidance factors of individual species are those currently recommended by SNH. An avoidance factor is applied to the results to account for avoidance of the turbines by birds in flight. This corrects for the ability of the birds to detect and manoeuvre around the turbines.

- No preference was taken for birds using flapping or gliding flight through the study area. In the calculation of the percentage risk of collision for a bird flying through a rotating turbine, the mean of the worst case scenario (*i.e.* a bird flying upwind through a turbine using flapping flight whilst the turbine is at its fastest rotation speed) and the best case scenario (*i.e.* a bird flying downwind through a rotating turbine using a gliding flight whilst the turbine at its slowest rotation speed) has been used.

The CRA also makes assumptions on the turbine specifications, such as rotor diameter and rotational speed. Because the final choice of turbine will not be known until a competitive tendering process is completed, the worst case scenario is assumed. The worst case scenario is a combination of the maximum collision risk area (affected by hub height and rotor blade length), maximum number of turbines proposed and minimum turbine downtime. The turbine and wind farm characteristics at Cloncreen Wind Farm are presented in Table 2.1.

**Table 2.1: Turbine and wind farm characteristics**

Wind Farm Component	Worst Case Scenario
Assumed turbine model	Nordex N117/2400 2.4 MW
Number of turbines	21
Blades per turbine rotor (3d model used)	3
Rotor diameter (m)	117
Rotor radius (m)	58.5
Hub height (m)	91
Swept height (m)	32.5 – 149.5
Mean pitch of blade (degrees)	30
Maximum chord (m)	3.13
Average depth (m)	1.13
Rotational period (s)	4.55 – 8.0 (13.2 – 7.5 rpm)
Turbine operational time (%)	100

### 3 RESULTS

Collision risks were calculated using flight data recorded during vantage point watches at three vantage point locations within the study area between 2014 and 2016. The target species were Kestrel, Peregrine, Sparrowhawk, Common Buzzard, Grey Heron, Whooper Swan, Mute Swan, Mallard, Golden Plover, Lapwing, Snipe and Lesser Black-backed Gull. Whooper Swan and Golden Plover were only recorded at the study area during the winter/passage period. Lesser Black-backed Gull was only detected during the summer/passage period.

The calculations below differ from species to species, depending on the amount of recorded flight time in the collision zone and numbers of birds present (ascertained during vantage point surveys). Calculations also differ according to differing body lengths, wingspans and flight speeds, the time periods in a year when birds are present and the corresponding number of hours that the birds can be expected to be active (information available from SNH and BTO online guidance). The calculation parameters are outlined in Tables 3.1 & 3.2. A worked example of the calculation of collision risk for Kestrel is available in Appendix 1.

**Table 3.1: Summary table of collision risk modelling at Cloncreen Wind Farm.**

Species	Collision Risk/yr	Collision every x years	Collisions in 25 yrs	Avoidance factor (%)	Note
Kestrel	0.13713	7.29	3.4	95	All year
Peregrine	0.01028	97.30	0.3	98	All year
Sparrowhawk	0.00501	199.52	0.1	98	All year
Buzzard	0.11649	8.58	2.9	98	All year
Grey Heron	0.00105	949.21	0.026	98	All year
Whooper Swan	0.00169	591.37	0.04	98	Winter & passage (Oct-Mar)
Mute Swan	0.00583	171.59	0.15	98	All year
Mallard	0.00354	282.88	0.088	98	All year
Golden Plover *	0.71101	1.41	17.8	98	Winter & passage (Oct-Mar)
Lapwing *	0.08606	11.62	2.2	98	All year
Snipe †	0.00650	153.94	0.2	98	All year
Lesser Black-backed Gull	0.00443	225.79	0.1	98	Summer & passage (Mar-Oct)

\* Golden Plover and Lapwing assumed to be active for 12 hours per day in winter and 15 hours per day in summer to account for some nocturnal activity.

† Snipe assumed to be active for 8 hours per day in winter and 15 hours per day in summer to account for crepuscular/nocturnal display flights.

**Table 3.2: Summary of collision risk modelling parameters for target species at Cloncreen Wind Farm.**

Species	Length (m)	Wingspan (m)	Ave. speed (m/s)	Seconds in flight 25 > X > 175 m
Kestrel	0.34	0.73	10.7	6,206
Peregrine	0.45	1.015	12.14	914
Sparrowhawk	0.35	0.68	9.7	610
Common Buzzard	0.52	1.2	9.31	12,114
Grey Heron	0.93	1.65	11.11	30
Whooper Swan	1.525	2.305	10	175
Mute Swan	1.5	2.2	15.0	385
Mallard	0.55	0.88	18.0	313
Golden Plover	0.265	0.56	12.5	81,109
Lapwing	0.295	0.695	10.0	7,919
Snipe	0.255	0.42	10.0	720
Lesser Black-backed Gull	0.52	1.255	12.0	245

A number of additional species that would be considered as potential target species because of their international, national, or local conservation importance, or because they are from bird groups that are considered to be prone to collision with wind turbines (*i.e.* waterbirds and raptors) were recorded in flight at the study area. It is not possible to accurately calculate collision risk figures for these species because they were not recorded in flight at altitudes that would have exposed them to the risk of collision with turbines. These species include Hen Harrier, Ringed Plover, Woodcock, and Long-eared Owl.

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# Appendix 1

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## WORKED EXAMPLE OF COLLISION RISK CALCULATION

### To calculate the collision risk for Kestrel:

The sightings of Kestrel that were recorded in the study area during vantage point (VP) watches from October 2014 to March 2015 and from March 2015 to August 2016 were used to calculate the collision risk for Kestrel at the site of the proposed development. In the calculations, the length of a Kestrel was taken to be 0.34 metres and the wingspan 0.73 metres. The flight velocity of the Kestrel is assumed to be 10.7 metres per second in level flight. The following example shows the calculation for resident Kestrel for the whole year.

#### Stage 1: Calculation of the probability of a bird flying through the rotor swept area

In order to take into account the overlaps in the areas that were viewed from the different VPs, the size of the field of view for each VP was estimated by mapping in the field and the areas for the three VPs were summed to give a cumulative area ( $A_{\text{cumulative}}$ ).

$$A_{\text{cumulative}} = 2,874.9 \text{ hectares}$$

Proportion of total observation time during which Kestrel were recorded in flight at heights between 25 metres and 175 metres during the 24 month period (6,536 seconds),  $t = 6536/1567800 = 0.0041688991$ .

The proportion of flight activity per hectare of visible area,  $F = t/A_{\text{cumulative}}$ .

$$F = 0.0041688991/2874.9 = 1.4501 \times 10^{-6} \text{ (per hectare)}$$

The Flight Risk Area of the proposed wind farm (outer turbines plus rotor radius) = 531.9 hectares.

Therefore, the proportion of flight time spent in flight between 25 metres and 175 metres in the wind farm area,  $t_2 = F \times \text{Flight Risk Area} = 7.71309412 \times 10^{-4}$ .

This value must be adjusted to take account of the actual turbine rotors. The lowest swept height is hub height minus rotor radius and the highest swept height is hub height plus rotor radius.

$$7.71309412 \times 10^{-4} \times ((164.5 - 33.5)/(175-25)) = 0.00067361 \text{ (0.0674 \%)}$$

In order to account for Kestrel occupancy over one year, birds have been assumed to be present in the wider area for the whole of that time. The assumption is made that the birds are active for 12 hours per day during April-September (183 days) and 8 hours per day during October-March (182 days). This is approximately equivalent to the length of time that the birds may be active during a day.

Occupancy,  $n = ((183 \times 12) + (182 \times 8)) \times t\% = 3652 \text{ hours} \times 0.00067361 = 2.46002 \text{ hours per year}$ .

The flight risk volume,  $V_w = \text{flight risk area} \times \text{diameter of rotors}$

$$531.9 \text{ hectares} \times 10,000 \times 131 \text{ metres} = 696789000 \text{ m}^3$$

Volume swept by the rotors,  $V_r = \text{number of turbines} \times \pi r^2 \times (d+l)$ , where  $d$  is the average depth of the rotors,  $l$  is the average length of the birds and  $r$  is the radius of the rotors.

$$21 \times 13478.2 \times (1.58 + 0.34) = 543441.024 \text{ m}^3$$

The bird occupancy of swept volume,  $b = n \times (V_r/V_w)$ , where  $n$  is the bird occupancy for the year, from above

$$2.46002 \times (543441.024/696789000) = 0.00191863 \text{ hours (6.91 seconds) per year.}$$

Time taken for a bird to fly through rotors of one turbine,  $t_3 = (d+l)/v$ , where  $v$  is the average velocity of the birds.

$$t_3 = 1.92/10.7 = 0.179439252 \text{ seconds}$$

Therefore, number of bird transits through the rotors is:  $b/t_3$ ,  $6.91/0.179439252 = \mathbf{38.49}$  bird transits per year.

Note that this figure does not take into account the possibility of Kestrel avoiding the area of the wind farm development, either during or post construction.

## Stage 2: Calculation of the probability of the birds colliding with the turbine rotors

The probability of a bird actually colliding with the turbine blades when making a transit through a rotor depends on a number of factors that are imperfectly known and at present often have to be estimated. Not least of these is the avoidance factor that is used to approximate the ability of birds to take evasive action when coming close to wind turbine blades. The method of Band *et al.* (2005) makes a number of assumptions: birds are assumed to be of a simple cruciform shape, turbine blades are assumed to have width and pitch angle, but no thickness, birds fly through turbines in straight lines and their flight is not affected by the slipstream of the turbine blade *etc.* In the calculations the length of a Kestrel was taken to be 0.34 metres and the wingspan 0.73 metres. The flight velocity of the Kestrel is assumed to be 10.7 metres per second. The maximum chord of the blades is taken to be 4.4 metres, the pitch is assumed to be 30 degrees and the rotation cycle is taken to be between 5.17 and 9.23 seconds per rotation (equivalent to 11.6 and 6.5 revolutions per minute, where the operating range of the wind turbine is 6.5-11.6 rpm), depending on wind conditions.

A probability,  $p(r, \phi)$ , of collision for a bird at radius  $r$  from the hub and at a position along a radial line that is at angle  $\phi$  from the vertical is calculated. This probability is then integrated over the entire rotor disc, assuming that the bird transit may be anywhere at random within the area of the disc. Scottish Natural Heritage (SNH) have made available a spreadsheet to aid the calculation of these probabilities. For a full explanation of the calculation methods see Band *et al.* (2005). The results of the calculations are shown in Table 1, below.

**Table 1: Collision probability calculations for Kestrel**

Rotation period (s)	Flapping bird			Gliding bird		
	%p, upwind	%p, downwind	%p, mean	%p, upwind	%p, downwind	%p, mean
5.17	12.1	5.8	9.0	12.0	5.7	8.9
6.19	10.8	4.6	7.7	10.6	4.5	7.6
7.20	9.8	3.9	6.8	9.7	3.8	6.7
8.22	9.1	3.4	6.2	8.9	3.2	6.1
9.23	8.5	3.1	5.8	8.3	2.9	5.6

Table 2, below, shows the product of these probability calculations with the calculated probability of the birds flying through the area swept by the rotors, assuming to the avoidance factor is 0 (*i.e.* no evasive action is taken by birds flying close to turbines).

**Table 2: Predicted annual number of collisions for the ‘no evasive action’ scenario**

Avoidance factor (%)	Collisions at 5.17 secs rotation period, upwind, flapping bird	Collisions at 9.23 secs rotation period, downwind, gliding bird
0	4.658	1.116

### Stage 3: Using an avoidance factor

SNH (2010) suggests that a value of 95% should be used for Kestrel with the Band Model. The values for annual collisions of Kestrel for an avoidance factor of 95% for the worst case (*i.e.* 4.55 seconds rotational period, upwind, flapping bird) and the best case (*i.e.* rotational period 8.0 seconds, downwind, gliding bird) scenarios are shown in Table 3.

**Table 3 Predicted annual collisions for a 95% avoidance factor**

Avoidance factor, assuming no preference away from wind farm area	Collisions at 5.17 secs rotor, upwind, flapping bird	Collisions at 9.23 secs rotor, downwind, gliding bird
90.00%	0.466	0.112
95.00%	0.233	0.056
98.00%	0.093	0.022
99.00%	0.047	0.011
100.00%	0.0	0.0

### Collision risk for non-stop (100%) turbine operation

For Kestrel present during the autumn season and taking SNH’s recommended 95% avoidance factor (and assuming no preferential avoidance of the site), the collision risk varies between 0.233 collisions per year in the worst case scenario (upwind, very windy conditions, flapping bird) and 0.056 collisions per year in downwind, less windy conditions, gliding bird. The average figure is **0.144** collisions per year. This is equivalent to one collision every **6.93** years, or **3.61** collisions during a nominal 25-year wind farm lifespan, for the worst case scenario where turbines are considered to be rotating for 100% of the time.

### Stage 4: Accounting for turbine rotational downtime

Information provided by the client indicates that the turbines will be operational for 95% of the time (*i.e.* assuming a downtime of 5% for maintenance and unsuitable wind speeds). This gives a figure of **0.137** collisions per year, equivalent to one collision every **7.29** years, or **3.4** collisions during a nominal 25-year wind farm lifespan.