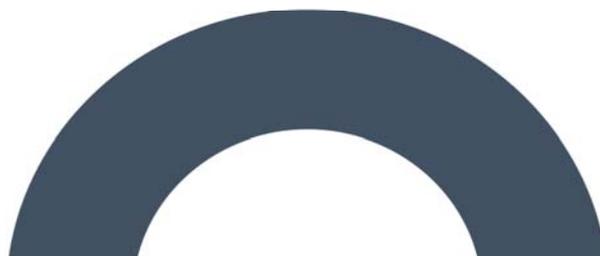


Appendix 7-4 – Core Survey Data

Cleanrath Wind Farm





DOCUMENT DETAILS

Client: **Cleanrath Windfarm Ltd**

Project Title: **Cleanrath Wind Farm**

Project Number: **191223a**

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Prepared By: **MKO
Tuam Road
Galway
Ireland
H91 VW84**



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01	Draft	08/05/2020	PM	DN
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Table of Contents

TABLE OF TABLES

<i>Table 1 Whooper Swan Survey Data.....</i>	<i>1</i>
<i>Table 2 Golden Plover Survey Data.....</i>	<i>2</i>
<i>Table 3 Hen Harrier Survey Data.....</i>	<i>7</i>
<i>Table 4 Chough Survey Data.....</i>	<i>11</i>
<i>Table 5 Merlin Survey Data.....</i>	<i>12</i>
<i>Table 6 Peregrine Survey Data.....</i>	<i>13</i>
<i>Table 7 Wigeon Survey Data.....</i>	<i>15</i>
<i>Table 8 Woodcock Survey Data.....</i>	<i>16</i>
<i>Table 9 Kestrel Survey Data</i>	<i>17</i>
<i>Table 10 Sparrowhawk Survey Data</i>	<i>31</i>
<i>Table 11 Buzzard Survey Data.....</i>	<i>34</i>
<i>Table 12 Common Snipe Survey Data.....</i>	<i>35</i>
<i>Table 13 Teal Survey Data</i>	<i>41</i>

APPENDIX 7-4 (SURVEY DATA)

Table 1 Whooper Swan Survey Data

Wildfowl Surveys					
Date	Location	Species	Number of birds	Notes on habitat and activity	Surveyor
04/01/2015	4	Whooper Swan	2	Two individuals travelling East over lake, turned Northeast slightly and seen landing on edge of reedbed.	DP
04/01/2015	4	Whooper Swan	3	Three individuals travelling East over lake, turned Northeast and landed in in reedbed area with two previous WS sightings.	DP
04/01/2015	4	Whooper Swan	2	Two individuals travelling east across lake, turned Northeast before seen dropping down into area of previously sighted WS.	DP
09/12/2015	4	Whooper Swan	2	Two individuals flying west from behind island low over surface of lake, seen landing in lake but disappeared behind reedbed and no visual made then.	DP
09/12/2015	4	Whooper Swan	2	Possibly the same two individuals seen feeding along edge of farmland and lake and remained there for the duration of the vantage count survey.	DP
15/12/2015	5	Whooper Swan	3	Three individuals seen swimming out from area of reed bed and seen feeding near shore of farmland and remained there for the duration of count.	DP
15/12/2015	5	Whooper Swan	3	More than likely the same individuals as seen earlier in the morning, seen feeding along edge of shore and remained there for duration of count.	DP
09/02/2016	4	Whooper Swan	7	Small group seen coming around bend on lake, swimming gradually heading east all the time until visual was lost.	DP
14/12/2016	Lough Allua	Whooper Swan	8		DP
09/01/2017	Lough Allua	Whooper Swan	11		DP
26/01/2017	Lough Allua	Whooper Swan	13		DP
07/02/2017	Lough Allua	Whooper Swan	13		DP
23/02/2017	Lough Allua	Whooper Swan	13		DP

Table 2 Golden Plover Survey Data

Vantage Point Surveys													
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Comments	Surveyor
GP001	21/03/2015	1	Golden Plover	26	08:01	30	30		0		Flocking and roosting on summit near VP1. Seen at various times throughout the day.	headed North	SI
GP002	21/03/2015	2	Golden Plover	26	14:53	30			30		Flock flying around summit	Headed West	SI
GP003	21/03/2015	2	Golden Plover	40	15:24	50			50		Possible different larger flock flying within the south section of the site.	Headed East	SI
GP004	22/03/2015	3	Golden Plover	35	08:30	40			40		One of the same flocks as seen on previous day. Seen onsite at various times throughout the watch period	headed north	SI
GP005	23/11/2015	1	Golden Plover	2	09:09:00	50			50		GS4, (Wet grassland) E, (Exposed rock and disturbed ground) Individuals seen calling behind VP 1, Heading Northwest initially before turning around and headed back south.		D
GP006	23/11/2015	1	Golden Plover	8	09:10:00	20			20		GS4, (Wet grassland) E, (Exposed rock and disturbed ground) Group of 8 individuals joined initial two individuals heading South, continued South briefly before heading East.		D
GP007	23/11/2015	1	Golden Plover	5	10:08:00	20			20		GS4, (Wet grassland) E, (Exposed rock and disturbed ground) Individuals seen Southwest of VP1 circling numerous times before continuing on Southwest.		D
GP008	24/11/2015	2	Golden Plover	8	08:34:00	55	45		10		GS4, (Wet grassland) E, (Exposed rock and disturbed ground) Group of 8 seen east of VP 2, heading Northwest initially but then seen circling low to the ground around area of VP before last seen heading West.		D
GP009	24/11/2015	2	Golden Plover	11	10:32:00	340	10		330		GS4, (Wet grassland) E, (Exposed rock and disturbed ground) Individuals seen behind		D

Vantage Point Surveys													
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Comments	Surveyor
											VP calling out and circling before continuing on Southwest for some time.		
GP010	24/11/2015	2	Golden Plover	8	10:40:00	90			80		GS4, (Wet grassland) E, (Exposed rock and disturbed ground) Individuals from original group at 10:32, seen heading Northeast flying low in some areas and circling around VP 2 before last seen heading West.		D
GP011	24/11/2015	1	Golden Plover	8	11:14:00	20			20		GS4, (Wet grassland) E, (Exposed rock and disturbed ground) Individuals seen travelling North before turning back South, calling out		D
GP012	24/11/2015	1	Golden Plover	8	11:26:00	95	10		85		GS4, (Wet grassland) E, (Exposed rock and disturbed ground) Same group of individuals I suspect, seen Northeast of VP, Heading Northwest but turned South heading over VP, Continuing on South.		D
GP013	16/12/2015	1	Golden Plover	10	09:29:00	20	20		0		GS4, (Wet grassland) E, (Exposed rock and disturbed ground) Individuals seen travelling Northwest before seen turning west, flying low to the ground, disappeared briefly before last seen heading east past VP1.		D
GP014	16/12/2015	1	Golden Plover	17	09:31:00	25	10		15		GS4, (Wet grassland) E, (Exposed rock and disturbed ground) Initial 1st group joined this group. Perched briefly between VP1 AND VP2, then flew off east initially before turning back west.		D
GP015	16/12/2015	1	Golden Plover	52	09:35:00	35			35		GS4, (Wet grassland) E, (Exposed rock and disturbed ground) Large group seen travelling North between VP 1 AND VP 2,		D

Vantage Point Surveys													
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Comments	Surveyor
											Before turning and seen travelling Southwest.		
GP016	16/12/2015	1	Golden Plover	13	09:49:00	40	15		25		GS4, (Wet grassland) E, (Exposed rock and disturbed ground) Individuals seen travelling North over VP 1 and seen doing a U-turn and headed back south and perched between VP1 AND VP2 very briefly before continuing on South.		D
GP017	16/12/2015	2	Golden Plover	11	12:32:00	240	60		180		GS4, (Wet grassland) E, (Exposed rock and disturbed ground) Individuals circling over VP 2 low to the ground before heading North initially before turning and continuing on east.		D
GP018	16/12/2015	2	Golden Plover	4	13:09:00	145	40		105		GS4, (Wet grassland) E, (Exposed rock and disturbed ground) 4 individuals travelling North over VP circling between VP 1 and 2 before seen travelling Southwest.		D
GP019	16/12/2015	2	Golden Plover	14	14:22:00	45			45		GS4, (Wet grassland) E, (Exposed rock and disturbed ground) Individuals heard calling from the North initially, visual made and seen circling between VP 1 AND 2, flew off Northwest finally.		D
GP020	30/12/2015	2	Golden Plover	12	10:22:00	50			50		GS4, (Wet grassland) E, (Exposed rock and disturbed ground) 12 individual seen travelling Northeast past VP and seen circling between VP 1 AND VP 2 and eventually continued on east.		D
GP021	10/02/2016	2	Golden Plover	5	08:38:00	10	10		0		GS4, (Wet grassland) HH, (Heath) Individuals heard calling out initially, visual made perched in heather before flying off east low over heather.		D

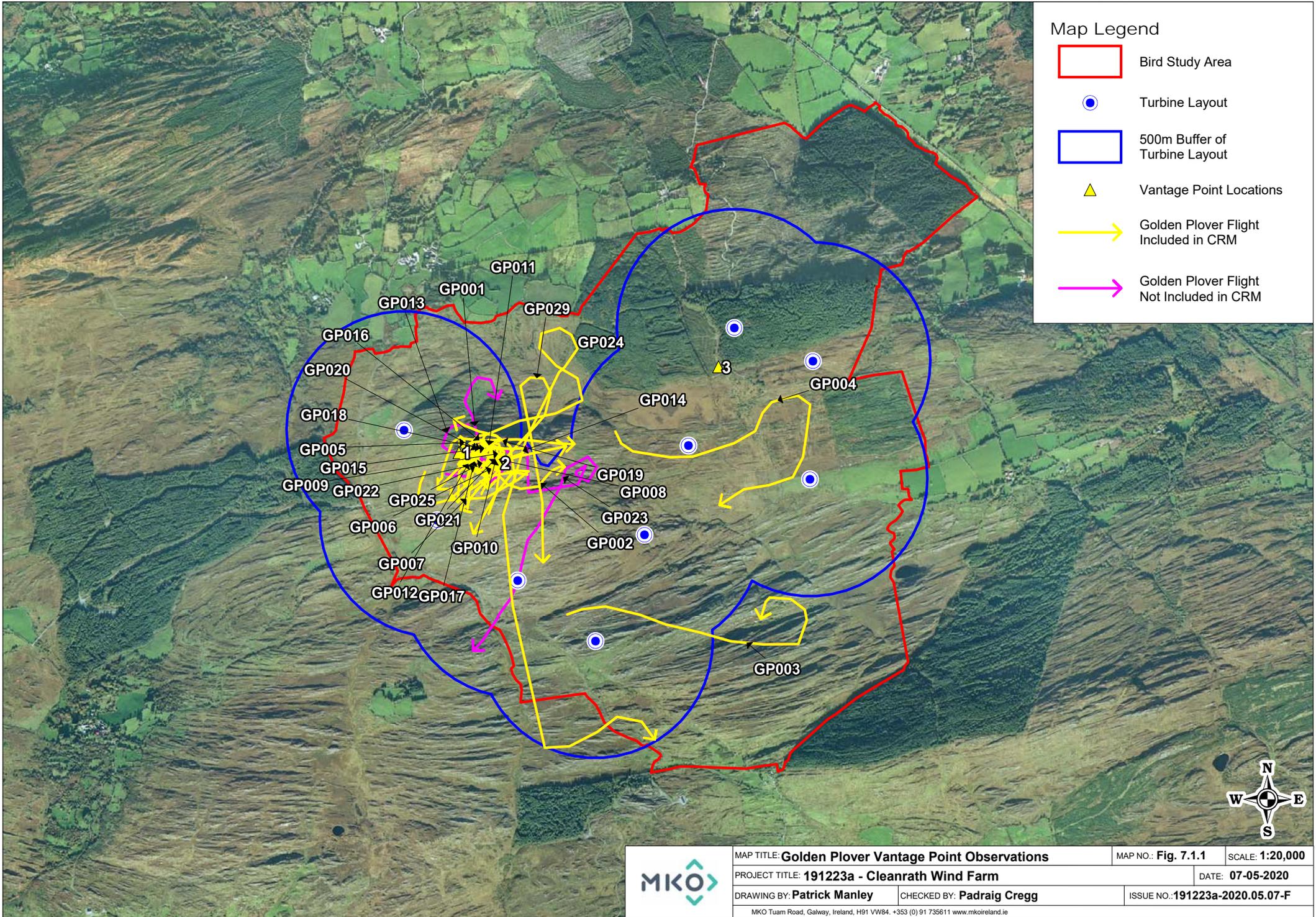
Vantage Point Surveys													
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Comments	Surveyor
GP022	10/02/2016	2	Golden Plover	1	10:23:00	15	15		0		GS4, (Wet grassland) HH, (Heath) Individual disturbed by Ravens, flew off heading east.		D
GP023	07/04/2016	2	Golden Plover	29	14:21	110				110	E, (Exposed rock and disturbed ground) H, (Heath and dense bracken) Group travelling past VP heading south, turned back east briefly and circled a number of times of before carrying on Southwest across site.		D
GP024	28/11/2016	2	Golden Plover	11	10:16	445	15	40	390				D
GP025	14/12/2016	1	Golden Plover	2	10:46	5	5				WS, (Scrub/ transitional woodland) Moving between VP 1 and VP 2, pair of GP disturbed, flew off east low to the ground calling out.		D
GP026	20/12/2016	2	Golden Plover	3	07:50	5	5				E, (Exposed rock and disturbed ground) Individuals disturbed on way to VP, Flew east briefly only to land again quickly.		D
GP027	20/12/2016	2	Golden Plover	3	08:33	5	5				WS, (Scrub/ transitional woodland) Original three spotted earlier disturbed by male HH, Flew off Northwards.		D
GP028	20/12/2016	2	Golden Plover	2	08:49	70			25	35	E, (Exposed rock and disturbed ground) Pair can be heard calling behind VP, visual made and birds can be seen heading Southwest initially before heading South.		D
GP029	23/01/2017	2	Golden Plover	23	09:28	185			185		WS, (Scrub/ transitional woodland) Large group heard calling initially. Seen travelling Northeast over VP, before turning a full circle and continued on south until visual was lost.		D
GP030	28/02/2017	2	Golden Plover	15	10:22	45			45		E, (Exposed rock and disturbed ground) Call of GP, can be heard initially. Visual		D

Vantage Point Surveys													
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Comments	Surveyor
											made and small group can be seen heading Northeast above VP, circled briefly before carrying on Northeast until visual was lost.		
GP031	28/02/2017	2	Golden Plover	8	12:06	100		65	35		E, (Exposed rock and disturbed ground) Group heard flying over VP, circled for extended period of time calling out before moving off southwest calling out.		D

Breeding Bird Surveys							
Obs. Ref. No.	Survey Date	Time of observation	Species	Number of birds	Notes on Habitat and Activity	Comments	Surveyor
GP001	23/05/2016	08:45	Golden Plover	21	Large group heard calling out initially, seen heading North over area of conifers.	Flying/Calling out on site	D

Winter Transect Surveys							
Obs. Ref. No.	Survey Date	Time of observation	Species	Number of birds	Notes on Habitat and Activity	Comments	Surveyor
GP001	05/12/2016	10:12:00	Golden Plover	4	H, (Heath and dense bracken) Individuals disturbed between VP1 and VP 2. Headed South, calling out.	On	D
GP002	12/12/2016	12:32:00	Golden Plover		E, (Exposed rock and disturbed ground) Golden Plover can be heard calling out over area of site but no visual made due to weather conditions.	On	D
GP003	24/01/2017	14:45:00	Golden Plover	12	E, (Exposed rock and disturbed ground) Small group disturbed between VP 1 AND VP 2. Headed off southwest calling out.	On	D
GP004	21/02/2017		Golden Plover	6	small group disturbed close to VP 1 and VP 2. Flew off northwest calling out	On	D

Incidental Observations					
Date	Survey Type	Species	Number of Individuals	Notes	Surveyor
27/03/2015	Red grouse Survey	Golden Plover	6	In breeding habitat	PC
24/03/2016	Red grouse Survey	Golden Plover	4	Flushed	PC
22/03/2017	Red grouse Survey	Golden Plover	10	21396 69210	
22/03/2017	Red grouse Survey	Golden Plover	32	20134 68992	

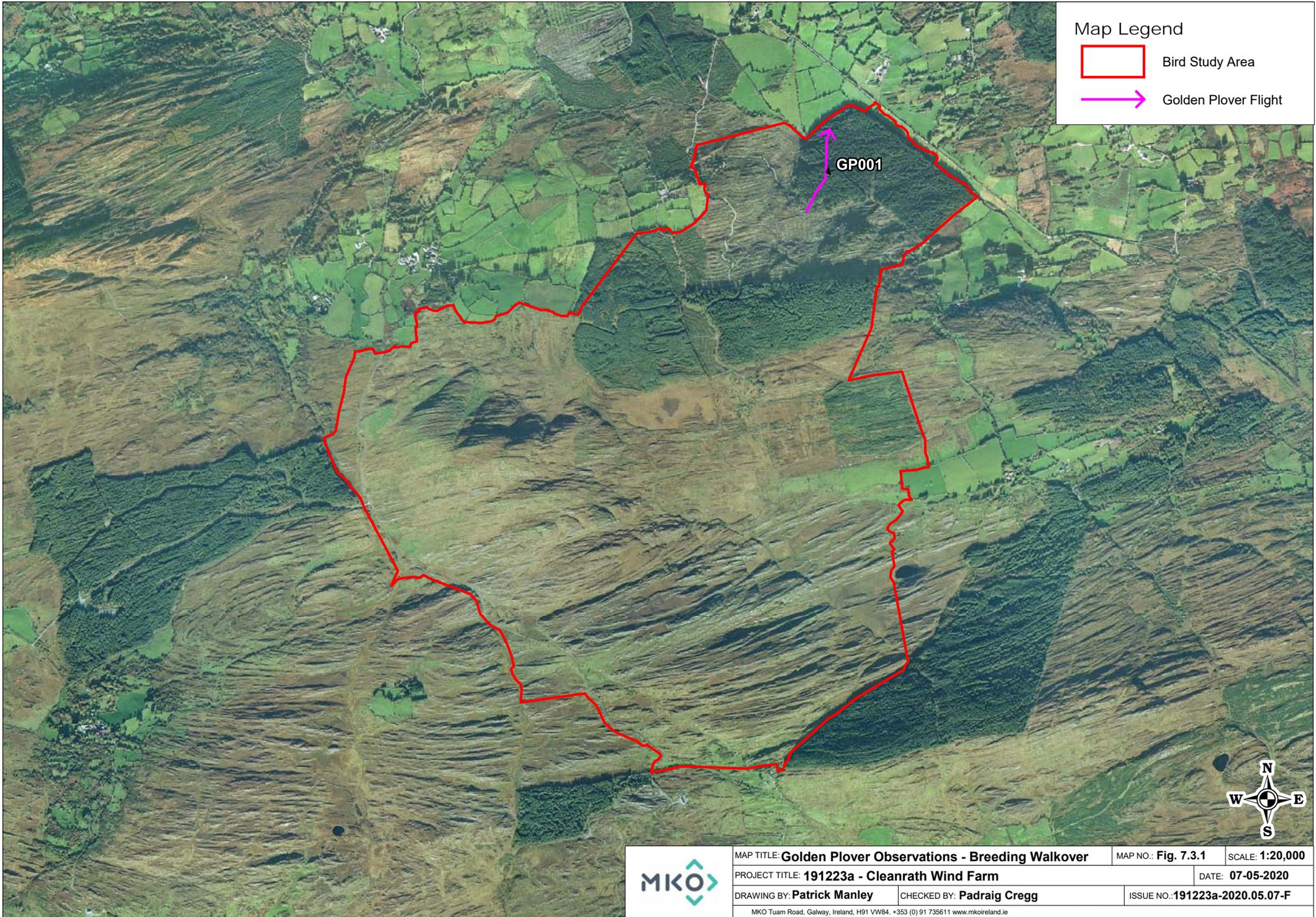


Map Legend

- Bird Study Area
- Turbine Layout
- 500m Buffer of Turbine Layout
- ▲ Vantage Point Locations
- Golden Plover Flight Included in CRM
- Golden Plover Flight Not Included in CRM



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	PROJECT TITLE: 191223a - Cleanrath Wind Farm			DATE: 07-05-2020	
	DRAWING BY: Patrick Manley		CHECKED BY: Padraig Cregg	ISSUE NO.: 191223a-2020.05.07-F	
	<small>MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie</small>				



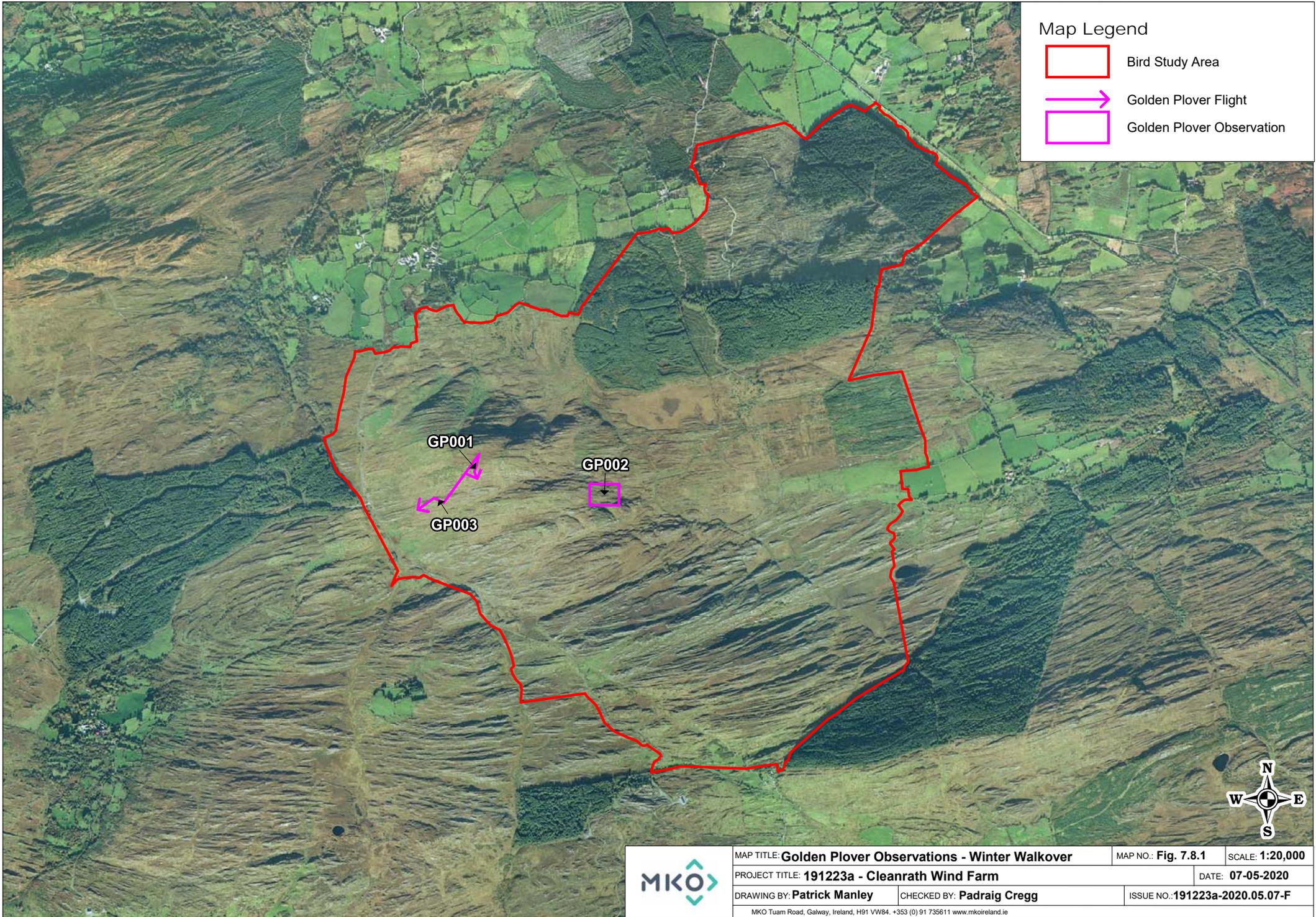


Table 3 Hen Harrier Survey Data

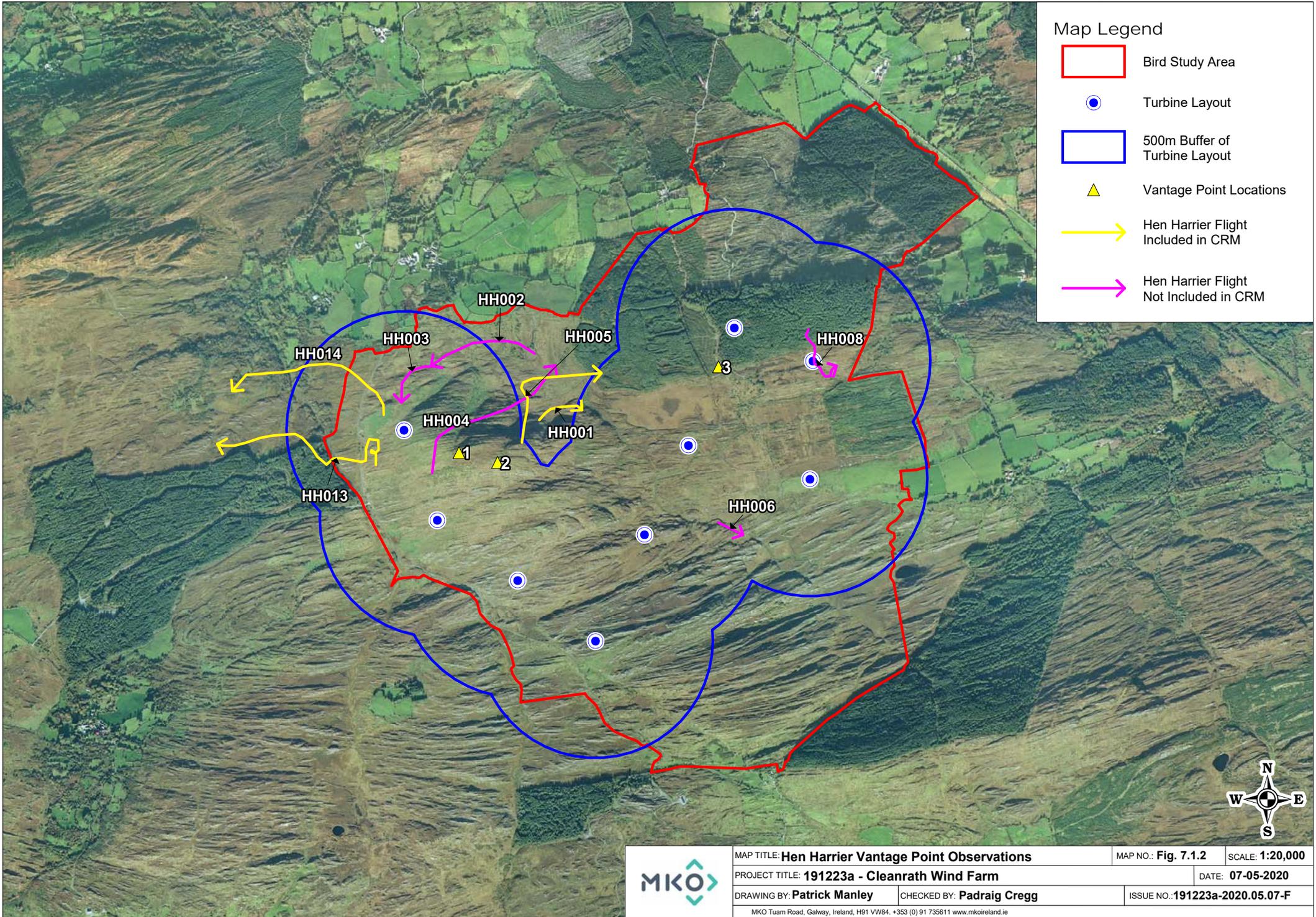
Vantage Point Surveys														
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Sex/Age	Notes on habitat and activity	Comments	Surveyor
HH001	21/02/2015	2	Hen Harrier	1	13:10:00	5			5		M	Male HH - Quick glimpse of bird as it rose from bracken and disappeared behind a rocky outcrop.	Headed East	SI
HH002	22/02/2015	1	Hen Harrier	1	12:03:00	45	45		0		M	Male HH - Quartering/hunting across heath/bog on the lower ground on-site, from E-W and landed in a patch of burned heather. Perched there for 20 mins (Perching spot = X on the map between flight line 2 and 3).	Headed West	SI
HH003	22/02/2015	1	Hen Harrier	1	12:23:00	60	60		0		M	Male HH - Same male left perching spot and hunted again over bog before disappearing around the hill.	Headed West	SI
HH004	22/02/2015	1	Hen Harrier	1	12:25:00	30	30		0		M	Male HH - Same male again flew over the summit of the hill behind VP 5m above summit and out of site (hence 300m) in a NE direction before lost sight of him due to glare.	Headed North East	SI
HH005	16/09/2015	1	Hen Harrier	1	08:27:00	30	10		30		F	Female seen flying east of VP 1, heading North over rough grassland, circling once before turning East and slowly declining in height heading towards area of conifer plantation, lost visual over conifer plantation.		D
HH006	28/10/2015	2	Hen Harrier	1	14:50:00	5	5		0			Male		JC

Vantage Point Surveys														
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Sex/Age	Notes on habitat and activity	Comments	Surveyor
HH007	29/10/2015	1	Hen Harrier	1	07:36:00	8			8			Male		JC
HH008	07/12/2016	3	Hen Harrier	1	14:14	25	20	5			M	WD4, (Conifer plantation) Male observed flying South over juvenile conifer plantation low to the ground hunting. Male then turned Northeast, over area of heath habitat and visual lost due to surrounding terrain.		D
HH009	20/12/2016	2	Hen Harrier	1	08:33	10	10				M	WS, (Scrub/ transitional woodland) Male observed hunting low to the ground when disturbed GP, flew North chasing after individuals where visual was quickly lost due to the terrain.		D
HH010	20/12/2016	2	Hen Harrier	1	08:34	35		35			M	E, (Exposed rock and disturbed ground) Same male observed at 08.33 seen again flying south east past VP 2. Individual proceeded to turn South directly, observed slowly declining in height and passed over juvenile forestry where visual was lost.		D
HH011	20/12/2016	2	Hen Harrier	1	08:41	20	20				F	E, (Exposed rock and disturbed ground) Initial call of HH can be heard a short distance from VP. Female observed circling over area of rough terrain and then joined by a second female in the same area.		D

Vantage Point Surveys														
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Sex/Age	Notes on habitat and activity	Comments	Surveyor
HH012	20/12/2016	2	Hen Harrier	1	08:42	15	15				F	E, (Exposed rock and disturbed ground) Sighting of second individual seen with first individual. Pair seen circling over area of scrub, losing visual frequently due to the terrain. Visual lost quite soon as pair moved off behind terrain and not seen again.		D
HH013	13/01/2017	1	Hen Harrier	1	09:16	140	15	30	95		F	WS, (Scrub/ transitional woodland) Female observed flying North past VP 1 and dropped down low over area of scrub, turned back south briefly before turning westwards flying over area of scrub and juvenile forestry until visual was lost.		D
HH014	13/01/2017	1	Hen Harrier	1	10:12	120	20	50	50		F	WS, (Scrub/ transitional woodland) Female observed flying low over scrub heading north initially. Turned Northwest for a period of time. Seen dropping down in height over area of scrub and lost visual with distance.		D

Breeding Bird Surveys								
Obs. Ref. No.	Survey Date	Time of observation	Species	Number of birds	Sex/age	Notes on Habitat and Activity	Comments	Surveyor
HH001	15/04/2015	13:05	Hen Harrier	2	F	One flying directly over site, the other seen (W) of site some distance away	on site	D

Hen Harrier Roost Surveys								
Obs. Ref. No.	Date	Species	No. of Birds	Time of flight	Duration of flight (s)	Notes on habitat and activity	Comments	Surveyor
HH001	21/11/2016	Hen Harrier	1	16:12	15	WS, (Scrub/ transitional woodland) GM1, (Marsh) Sex unknown due to direct sunlight. Individual observed gliding slowly Northeast over area of habitat and seen declining in height into area of habitat.		D
HH002	21/11/2016	Hen Harrier	1	16:25	280	WS, (Scrub/ transitional woodland) GM1, (Marsh) Distinct silhouette of HH, more than likely same individual rising out of scrub area. Individual heading Southeast and can be seen gaining a lot of height. Seen circling for long periods of time, moved a significant distance from original location. Lost visual due to distance in the end.		D



Map Legend

- Bird Study Area
- Turbine Layout
- 500m Buffer of Turbine Layout
- ▲ Vantage Point Locations
- ➔ Hen Harrier Flight Included in CRM
- ➔ Hen Harrier Flight Not Included in CRM



	MAP TITLE: Hen Harrier Vantage Point Observations		MAP NO.: Fig. 7.1.2	SCALE: 1:20,000	
	PROJECT TITLE: 191223a - Cleanrath Wind Farm			DATE: 07-05-2020	
	DRAWING BY: Patrick Manley		CHECKED BY: Padraig Cregg	ISSUE NO.: 191223a-2020.05.07-F	
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie				

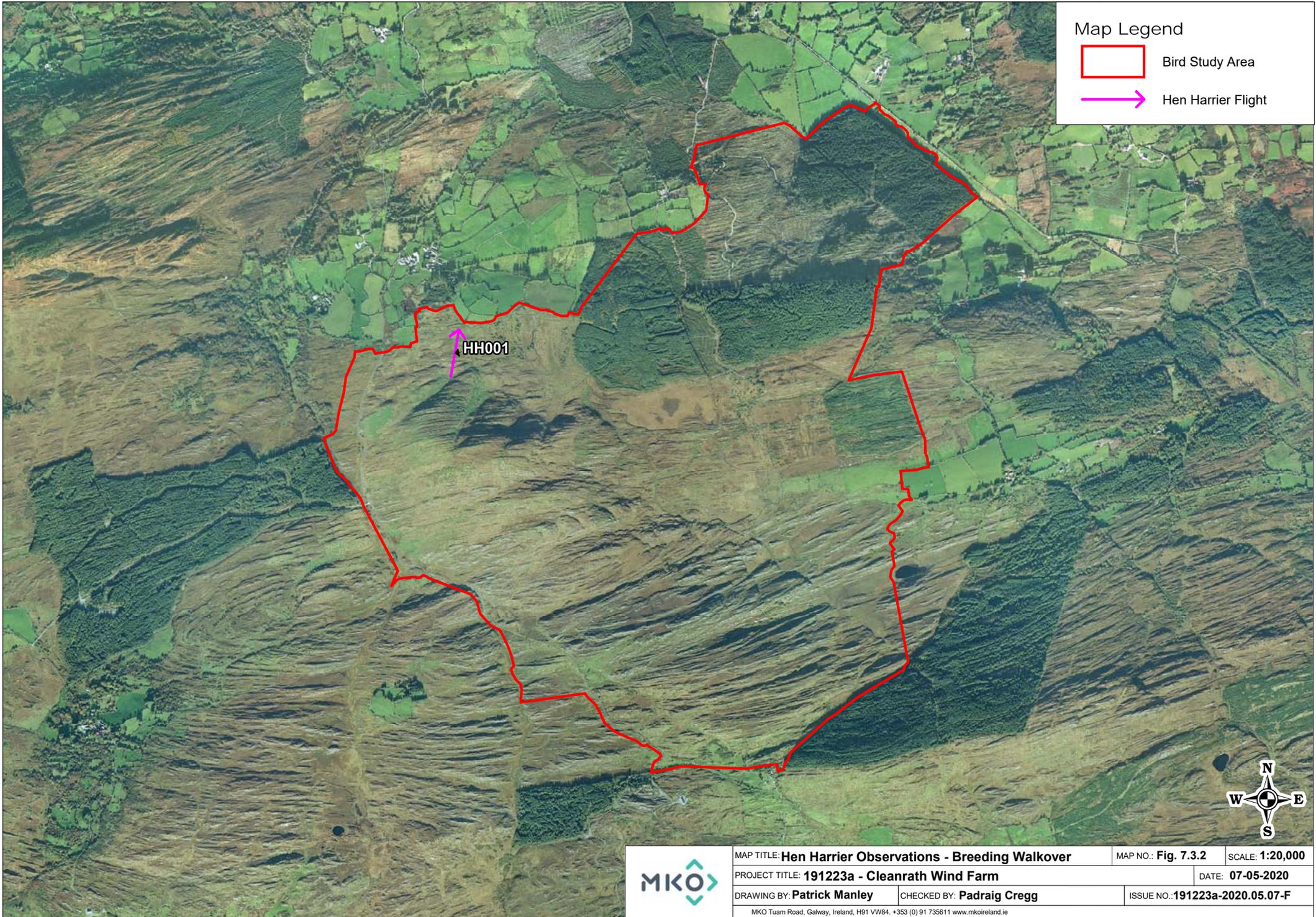


Table 4 Chough Survey Data

Breeding Bird Surveys							
Obs. Ref. No.	Survey Date	Time of observation	Species	Number of birds	Notes on Habitat and Activity	Comments	Surveyor
CF001	17/09/2015	11:13	Chough	1	Individual seen perched on rock face, calling out. Remained for perched for two mins before flying off Southwest then turned South flying low before perching again	On Site	D
CF002	17/09/2015	11:17	Chough	2	Individual can be heard calling initially and briefly seen. Visual confirmed and two individuals seen circling and perching on rock top feeding moss covered rock.	On Site	D
CF003	17/09/2015	11:33	Chough	2	The same two individuals remained perched for that time, seen flying West onto rock face calling out.	On Site	D
CF004	17/09/2015	11:38	Chough	1	Same individual seen at 11:13 can be heard calling out from area which he initially perched in.	On Site	D
CF005	17/09/2015	11:45	Chough	3	Two individuals flew North, joined by third individual. All three perched on rock outcrop feeding on lichen/moss covered rock. Remained perched for 2-3 mins before off North	On Site	D
CF006	28/07/2016	11:38	Chough	7	Group can be heard calling out initially, flying North over site and can then be seen circling for long period of time over area of farmland continually calling out.	On Site	D

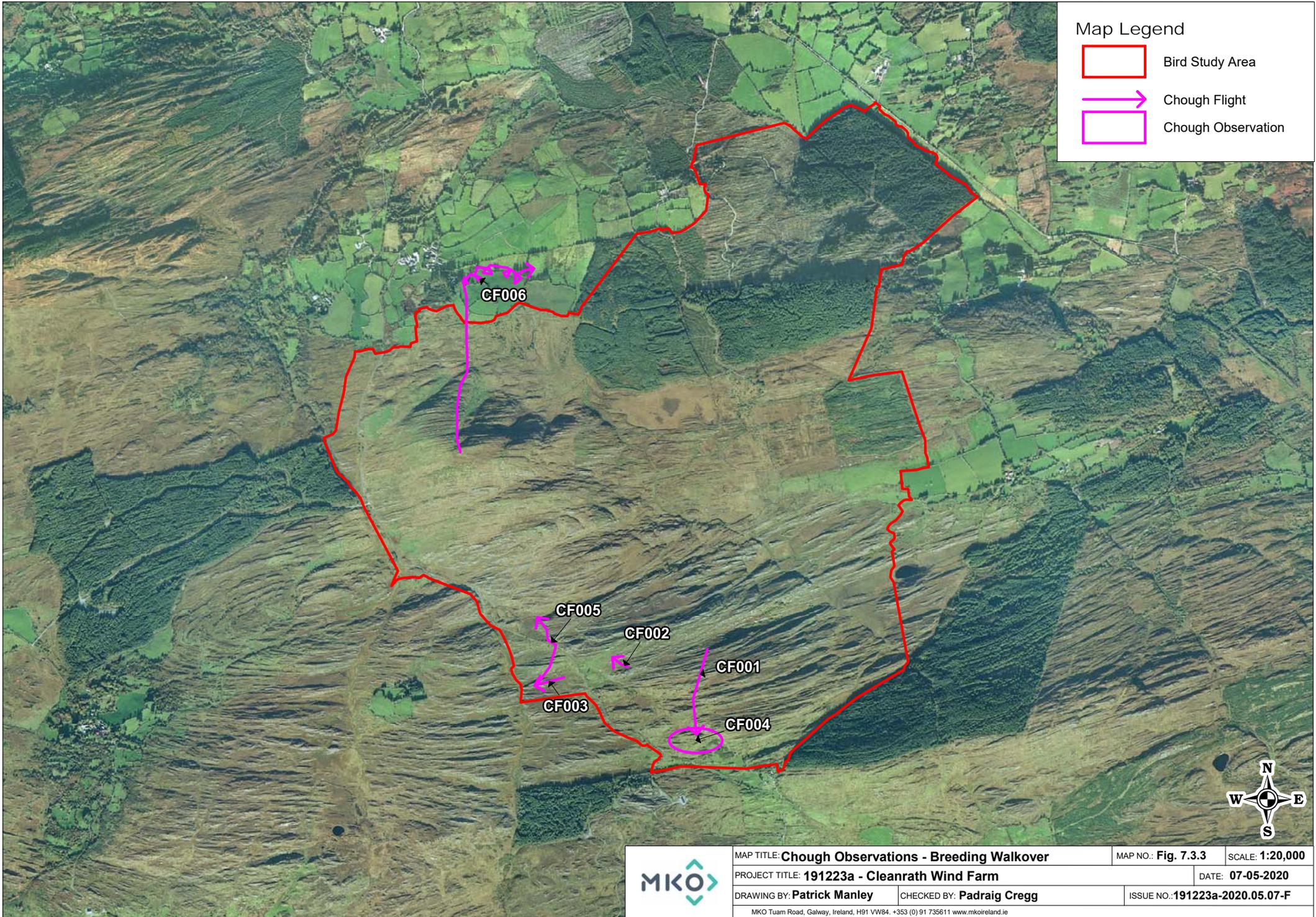


Table 5 Merlin Survey Data

Breeding Raptor Surveys								
Obs. Ref. No.	Date	RVP	Species	No. of Birds	Time of flight	Notes on habitat and activity	Comments	Surveyor
ML001	14/07/2015	HH wider search area	Merlin	1	11:46	Merlin seen flying North into Oak tree, remaining perched for 3-4 mins, before flying South and eventually flying into area mature conifer plantation.	On Site	D
ML002	14/07/2015	HH wider search area	Merlin	1	11:58	Possibly same individual seen flying into willow tree, remaining perched for 1-2 mins before flying west back into area of mature conifer plantation.	On Site	D

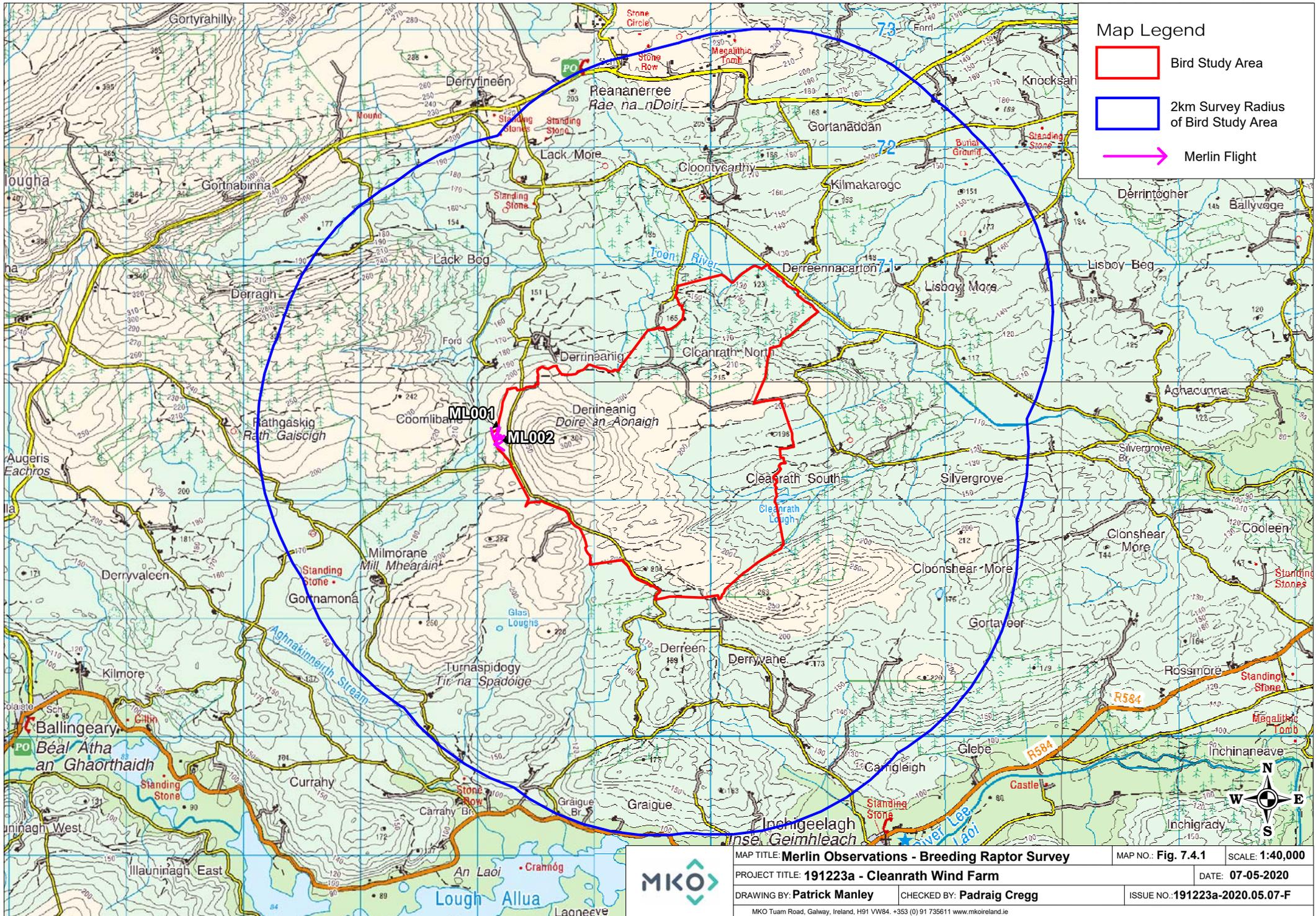
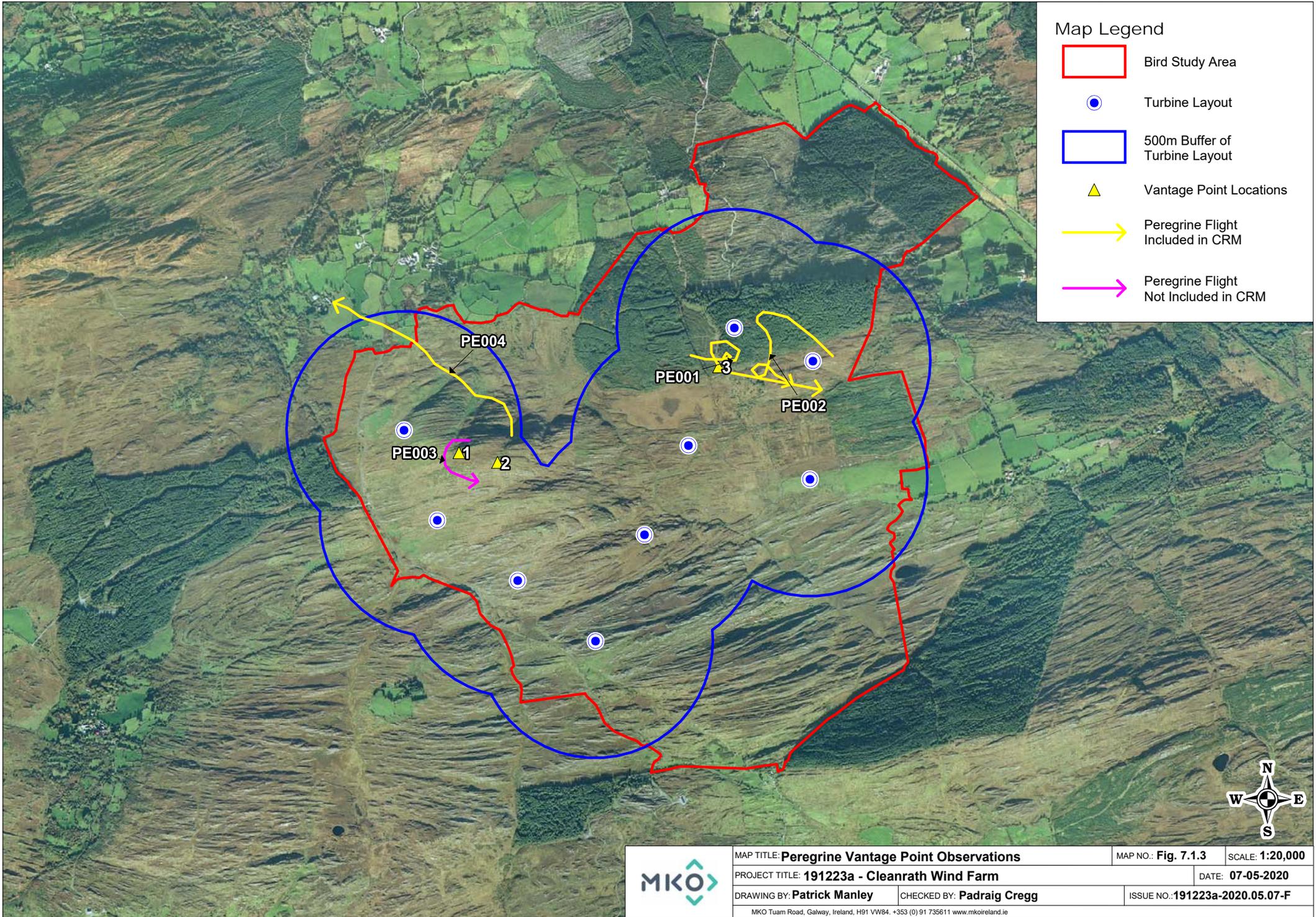


Table 6 Peregrine Survey Data

Vantage Point Surveys														
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Sex/Age	Notes on habitat and activity	Comments	Surveyor
PE001	26/08/2015	3	Peregrine Falcon	1	09:37:00	40			40		F	Female seen flying from the West over mature forestry chasing after rook, circled once over VP area before turning South initially before heading East finally into area of mature conifer plantation.		D
PE002	08/12/2015	3	Peregrine Falcon	1	09:21:00	50	30		20		M	WD4, (Conifer plantation) GS4, (Wet grassland) Adult Male seen chasing after Male Kestrel heading Northeast, lost visual briefly but individual turned back and headed South before finally turning Southeast over area of heather/farmland.		D
PE003	24/11/2016	1	Peregrine Falcon	1	12:08	20	20				M	WS, (Scrub/ transitional woodland) Male seen directly in front of VP, Heading Northwest initially. Performed a semi-circle around VP, dropped down behind a mound briefly before visual was seen again. Last seen heading east in close proximity to VP 2.		D
PE004	24/11/2016	1	Peregrine Falcon	1	12:13	70	10	15	55		M	WS, (Scrub/ transitional woodland) Same male seen again, headed North this time before gradually turning Northwest. Slowly soared away over area, headed offsite		D

Vantage Point Surveys														
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Sex/Age	Notes on habitat and activity	Comments	Surveyor
												boundary in the end and visual was lost due to distance of individual.		

Breeding Bird Surveys								
Obs. Ref. No.	Date	RVP	Species Name	No. of Birds	Time of flight	Notes on habitat and activity	Comments	Surveyor
PE001	17/05/2016		Peregrine	1	15:23		Soaring	D



Map Legend

- Bird Study Area
- Turbine Layout
- 500m Buffer of Turbine Layout
- ▲ Vantage Point Locations
- Peregrine Flight Included in CRM
- Peregrine Flight Not Included in CRM

	MAP TITLE: Peregrine Vantage Point Observations		MAP NO.: Fig. 7.1.3	SCALE: 1:20,000	
	PROJECT TITLE: 191223a - Cleanrath Wind Farm			DATE: 07-05-2020	
	DRAWING BY: Patrick Manley		CHECKED BY: Padraig Cregg	ISSUE NO.: 191223a-2020.05.07-F	
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Table 7 Wigeon Survey Data

Breeding Bird Surveys							
Obs. Ref. No.	Survey Date	Time of observation	Species	Number of birds	Notes on Habitat and Activity	Comments	Surveyor
WN001	15/04/2015	14:42	Wigeon	1	Disturbed	on site	D
WN002	15/04/2015	14:42	Wigeon	1	Disturbed	on site	D

Wildfowl Surveys							
Date	Location	Species	Number of birds	Feeding/ Roosting	Notes on habitat and activity	Comments	Surveyor
26/11/2015		Wigeon	6	Feeding	Group of Four males and two females seen feeding and swimming along edge of riverbank making their way into thick area of reedbed.	Group of Four males and two females seen feeding and swimming along edge of riverbank making their way into thick area of reedbed.	D
26/11/2015		Wigeon	2	Feeding	Individuals travelling west along edge or reed bed before landing in water and seen moving towards reed bed.	Individuals travelling west along edge or reed bed before landing in water and seen moving towards reed bed.	D
26/11/2015		Wigeon	4		Two pairs of wigeon seen feeding and moving along edge or reed bed.	Two pairs of wigeon seen feeding and moving along edge or reed bed.	D
27/11/2015		Wigeon	6		Group of males and females seen travelling along edge of reed bed.	Group of males and females seen travelling along edge of reed bed.	D
27/11/2015		Wigeon	4		Group seen travelling Northwest over area of lake heading towards area of reed beds.	Group seen travelling Northwest over area of lake heading towards area of reed beds.	D
31/08/2016		Wigeon	2		Pair resting upon lake shore.	Off Site	D
26/09/2016		Wigeon	8		Group heading North along edge of lake shore	Off Site	D
26/09/2016		Wigeon	6		Group rising out of reed bed and flying South.	Off Site	D
29/10/2016		Wigeon	6		Small group heading South across area of lake.		D
28/11/2016	Lough Allua	Wigeon	3		Individuals flying Southwest across area of lake.		D
07/02/2017	Lough Allua	Wigeon	4		Wigeon flying east across surface of lake.		D

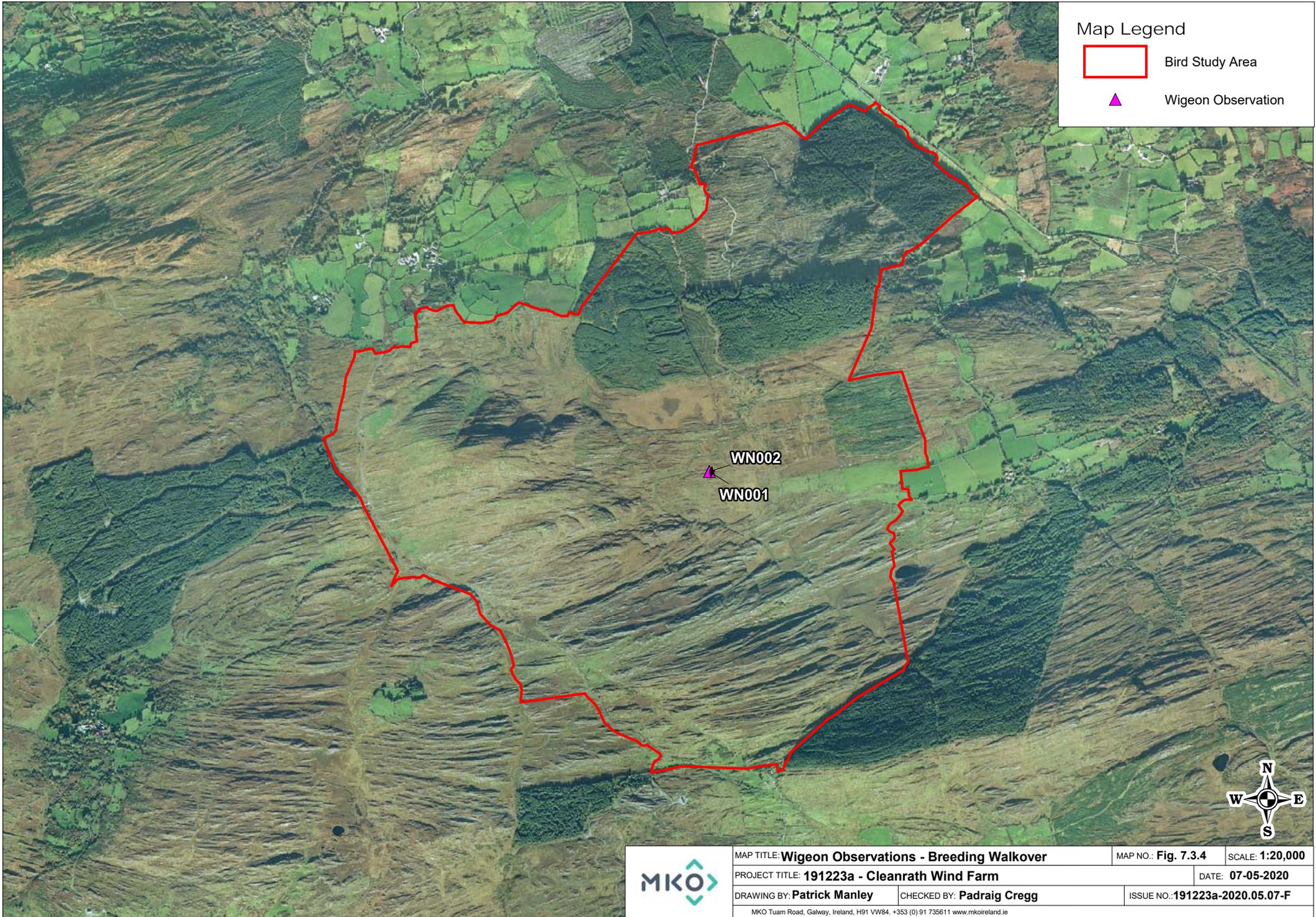
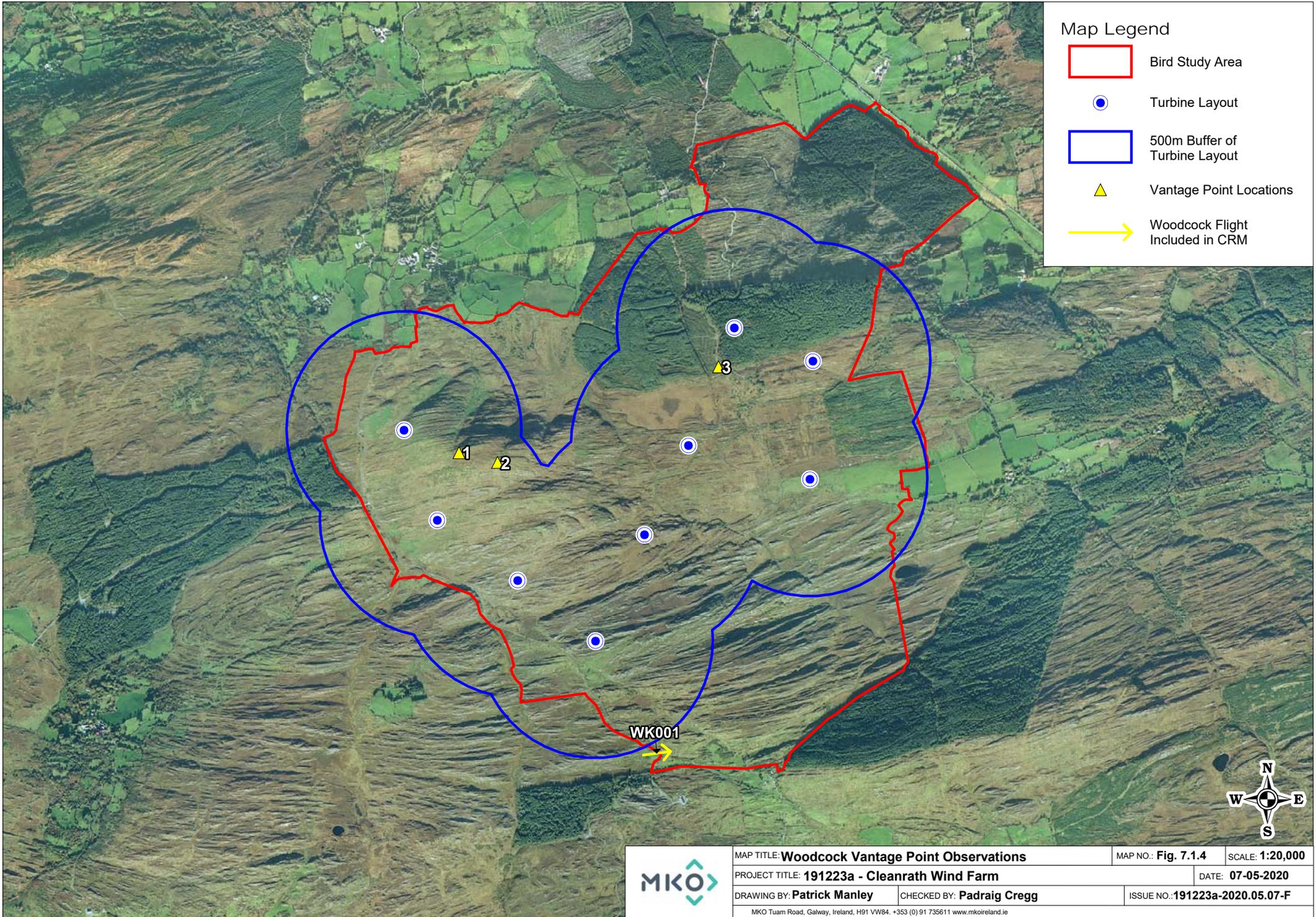


Table 8 Woodcock Survey Data

Vantage Point Surveys														
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Sex/Age	Notes on habitat and activity	Comments	Surveyor
WK001	28/11/2016	2	Woodcock	1	07:18							WS, (Scrub/ transitional woodland) (Incidental Sighting). Individual observed crossing road surface approaching site and VP locations. Rose off road and disappeared quickly into scrub.		D
WK002	20/12/2016	2	Woodcock	1	07:49	5	5					E, (Exposed rock and disturbed ground) Individual disturbed on way to VP, Flew off Southeast low to ground disappearing quickly.		D

Winter Transect Surveys							
Obs. Ref. No.	Survey Date	Time of observation	Species	Number of birds	Notes on Habitat and Activity	Comments	Surveyor
WK001	21/02/2017		Woodcock	1	Individual disturbed along road on site boundary, flew off west into cover of juvenile forestry.	Off	D



Map Legend

- Bird Study Area
- Turbine Layout
- 500m Buffer of Turbine Layout
- ▲ Vantage Point Locations
- Woodcock Flight Included in CRM

	MAP TITLE: Woodcock Vantage Point Observations		MAP NO.: Fig. 7.1.4	SCALE: 1:20,000
	PROJECT TITLE: 191223a - Cleanrath Wind Farm			DATE: 07-05-2020
	DRAWING BY: Patrick Manley	CHECKED BY: Padraig Cregg	ISSUE NO.: 191223a-2020.05.07-F	
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Table 9 Kestrel Survey Data

Vantage Point Surveys														
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Sex/Age	Notes on habitat and activity	Comments	Surveyor
K001	21/04/2015	1	Kestrel	1	08:15:00				0			Flying SW		D
K002	21/05/2015	3	Kestrel	1	15:10:00				0		M	male hunting low over Juvenile conifer plantation		D
K003	30/05/2015	3	Kestrel	1	15:30:00				0		F	female flying low along juvenile forestry		D
K004	18/06/2015	3	Kestrel	1	08:40:00				0		F	Female seen hovering over juvenile forestry		D
K005	18/06/2015	3	Kestrel	1	12:10:00				0		F	Female hovering over recently felled forestry		D
K006	18/06/2015	1	Kestrel	1	15:45:00				0		M	Male seen flying from the east over rough grassland		D
K007	18/06/2015	1	Kestrel	1	15:45:00				0		M	2nd male seen in the same area as previous male hovering over rough grassland		D
K008	25/06/2015	2	Kestrel	1	09:40:00				0		M	Male seen hovering over an area of heather before heading North		D
K009	25/06/2015	1	Kestrel	1	15:20:00				0		M	Male seen flying North		D
K010	23/07/2015	3	Kestrel	1	08:35:00				0		Juv	Juvenile seen Hovering low over young forestry plantation before heading North		D
K011	23/07/2015	3	Kestrel	1	09:25:00				0		Juv	Juvenile flying west over young forestry plantation before perching in silver birch tree before heading west again		D
K012	23/07/2015	3	Kestrel	1	10:15:00				0		M	Adult male seen hovering over young forestry		D

Vantage Point Surveys														
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Sex/Age	Notes on habitat and activity	Comments	Surveyor
												planation before heading Northwest		
K013	23/07/2015	3	Kestrel	1	11:45:00				0		M	Male seen hovering over rough grassland before heading east.		D
K014	29/07/2015	1	Kestrel	1	08:35:00				0		Juv	Individual flying North over rough grassland		D
K015	29/07/2015	2	Kestrel	1	11:40:00				0		M	Individual hovering along edge of forestry before heading east.		D
K016	29/07/2015	2	Kestrel	1	15:40:00				0		F	Female seen hovering and circling over edge of forestry before heading East.		D
K017	26/08/2015	3	Kestrel	1	12:15:00				0		Juv	Juvenile flying Southeast initially over juvenile forestry plantation before turning and headed back North.		D
K018	26/08/2015	3	Kestrel	1	13:05:00				0		F	Female seen hovering over area of heather above VP Location before continuing on West.		D
K019	27/08/2015	2	Kestrel	2	10:10:00				0		Juv	Two juveniles can be seen in front on VP2 hovering over area of rough grassland/edge of forestry plantation, circling in that vicinity before finally heading West.		D
K020	27/08/2015	2	Kestrel	1	14:30:00				0		M	Male seen hovering over area of rough grassland gradually heading East all the time.		D

Vantage Point Surveys														
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Sex/Age	Notes on habitat and activity	Comments	Surveyor
K021	10/09/2015	1	Kestrel	1	12:21:00	20			20		Juv	Juvenile seen in between VP 1 and VP 2, Hovering over rough grassland/Heather gradually heading South		D
K022	10/09/2015	2	Kestrel	1	16:04:00	160	20		140		Juv	Juvenile hovering over rough grassland, seen diving once into area of long grass, before flying off North initially before turning Northeast.		D
K023	10/09/2015	2	Kestrel	1	16:12:00	35	15		35		Juv	Juvenile seen flying West in gully, hovering briefly before turning Southeast and flying into areas of conifers, remained perched briefly before continuing on West over rough grassland		D
K024	16/09/2015	1	Kestrel	1	09:57:00	25			25		M	Juvenile male seen South, hovering over rough grassland before turning East		D
K025	16/09/2015	3	Kestrel	1	12:08:00	25			25		F	Female hunting over juvenile forestry, gradually heading North		D
K026	16/09/2015	3	Kestrel	1	12:22:00	20	10		20		Juv	Juvenile female, hovering over juvenile conifer plantation, dropping down quickly before rising again and continued on West.		D
K027	16/09/2015	3	Kestrel	1	12:28:00	95			95		Juv	Possibly the same female as above, hovering over juvenile forestry, gradually		D

Vantage Point Surveys														
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Sex/Age	Notes on habitat and activity	Comments	Surveyor
												moving North before turning Northeast finally.		
K028	16/09/2015	3	Kestrel	1	12:58:00	30			30		M	Male individual seen flying over immature forestry heading West		D
K029	16/09/2015	3	Kestrel	1	13:34:00	200			300		Juv	Female seen hovering Juvenile forestry, moving North initially before turning Northeast then East consistently hovering along the way.		D
K030	16/09/2015	3	Kestrel	1	14:17:00	380			380		Juv	Juvenile perched in spruce tree overlooking rough area of heather before flying off East after 6 mins and 20 Secs.		D
K031	16/09/2015	3	Kestrel	1	15:27:00	90	10		70		F	Female flying West over juvenile forestry before turning North and can be seen dropping sharply into area of juvenile forestry, called out abruptly before seen rising again and headed back East		D
K032	16/09/2015	3	Kestrel	1	15:28:00	45	10		40		M	Juvenile seen flying Northeast in same direction of Adult female above. Also seen dropping down sharply in same area before rising and headed West of mature conifer plantation.		D
K033	28/10/2015	2	Kestrel	1	11:50:00	15			15			Hovering/Hunting		JC

Vantage Point Surveys														
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Sex/Age	Notes on habitat and activity	Comments	Surveyor
K034	28/10/2015	2	Kestrel	1	11:49:00	5			5					JC
K035	29/10/2015	1	Kestrel	1	11:00:00	15			15					JC
K036	08/12/2015	3	Kestrel	1	08:53:00	190	10		180		M	WD4, (Conifer plantation) GS4, (Wet grassland) Male seen hovering over area of willows initially before moving Northeast over Conifer plantation, can be seen diving twice down into plantation before last seen moving Southeast.		D
K037	08/12/2015	3	Kestrel	1	09:21:00	25	25		0		M	WD4, (Conifer plantation) GS4, (Wet grassland) Male seen travelling Northeast over conifer plantation being chased by adult male Peregrine falcon, lost visual over plantation.		D
K038	08/12/2015	3	Kestrel	1	13:41:00	40	20		20		M			D
K039	04/01/2016	3	Kestrel	1	13:44:00	20	20		0			WD4, (Conifer plantation) Individual travelling Northwest over conifer plantation low to the ground before losing visual.		D
K040	12/04/2016	1	Kestrel	1	10:31	720		720				E, (Exposed rock and disturbed ground) H, (Heath and dense bracken) Male seen off site in area of improved Grassland. Flew onto top of conifer tree, remained perched for		D

Vantage Point Surveys														
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Sex/Age	Notes on habitat and activity	Comments	Surveyor
												duration of 11 mins before seen heading east towards area of conifer plantation.		
K041	12/04/2016	2	Kestrel	1	13:13	25		25				E, (Exposed rock and disturbed ground) H, (Heath and dense bracken) While assessing to re-establish sighting of BZ, male came into view. Seen hovering over area of heath and dropping down in height before losing visual.		D
K042	12/05/2016	1	Kestrel	1	16:38	50		30	20		M	E, (Exposed rock and disturbed ground) H, (Heath and dense bracken) Male seen hovering over dense area of vegetation, along site boundary before moving off Northeast.		D
K043	24/05/2016	2	Kestrel	1	17:47	50		65	25		M	E, (Exposed rock and disturbed ground) H, (Heath and dense bracken) Male seen hovering along of conifer plantation for a period of time before turning west and carrying on.		D
K044	03/06/2016	1	Kestrel	1	11:51	240	220	20				GA1, (Improved agricultural grassland) Male seen flying low over farmland heading east, individual perched on rock wall with suspected		D

Vantage Point Surveys														
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Sex/Age	Notes on habitat and activity	Comments	Surveyor
												prey item. Then individual took off heading Southeast, flew into conifer tree on farm boundary. Possible nest site. Individual not seen again.		
K045	20/06/2016	2	Kestrel	1	11:49	10	3	7			M	Male seen briefly hovering over area of dense vegetation, dropped down quickly where visual was lost behind brow of hill. Not seen again		D
K046	20/06/2016	1	Kestrel	1	16:52	20		20			M	Male initially heading Southwest, hovered briefly before dropping down in height significantly.		D
K047	27/06/2016	1	Kestrel	1	08:08	210	35	175				Male seen close to VP, hovering on one occasion as it headed South briefly, turned back North flying towards site boundary where last visual made male was heading Northeast.		D
K048	27/06/2016	1	Kestrel	1	08:11	10		10				While observing the above Male, second kestrel came into view through scope, individual heading eastwards but sex undetermined due to quick nature of visual.		D
K049	27/06/2016	1	Kestrel	1	10:32	95	25	35	35			Female seen hovering over area of scrub, dived down once into scrub. Rising out of		D

Vantage Point Surveys														
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Sex/Age	Notes on habitat and activity	Comments	Surveyor
												scrub, female headed NW past VP turning north then and flew across site and headed offsite flying bye possible known nest site.		
K050	07/07/2016	3	Kestrel	1	08:23	110		70	40		M	WD4, (Conifer plantation) Male seen flying Northwest over juvenile plantation. Perched along dead tree briefly. Flew Northwest and once again perched. Individual then seen flying completely North.		D
K051	07/07/2016	3	Kestrel	2	08:33	35		35			Juv	Two juveniles seen flying East along rough grassland, one individual perched in conifer tree while second individual carried on east.		D
K052	20/07/2016	1	Kestrel	1	11:57	5	5					Individual could be heard calling out abruptly west of VP Location, no visual made due to drop in land area.		D
K053	08/08/2016	3	Kestrel	1	14:26	35		35			Juv	WD4, (Conifer plantation) H, (Heath and dense bracken) Juvenile hovering over area of scrub heading South before turning east and flew directly away.		D
K054	08/08/2016	3	Kestrel	1	16:38	125		105	20		M	H, (Heath and dense bracken) Male seen hovering over of juvenile forestry, making its way Southeast.		D

Vantage Point Surveys														
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Sex/Age	Notes on habitat and activity	Comments	Surveyor
												Eventually turned Northeast and lost visual with distance.		
K055	24/08/2016	1	Kestrel	1	08:32	10		5				H, (Heath and dense bracken) Individual perched just off site boundary in area of recently felled forestry, calling out. No visual made due to gradient.		D
K056	24/08/2016	1	Kestrel	1	08:34	10		5				H, (Heath and dense bracken) Second individual can be heard calling out in response to 1st individual, again just off-site boundary and no visual made.		D
K057	24/08/2016	2	Kestrel	1	12:48	40	5	25	10		Juv	H, (Heath and dense bracken) Individual heard calling initially, visual made and was seen just behind VP, seen heading Northwest before dropping down behind brow of hill from VP 2 area.		D
K058	31/08/2016	1	Kestrel	1	11:26	200	15	25	160		M	H, (Heath and dense bracken) Male seen heading West in front of VP, Turned Southwest, hovered once before slowly seen circling area twice. Continued to glide down Southwest until visual was lost.		D
K059	31/08/2016	1	Kestrel	1	12:16	310	10	90	210		F	H, (Heath and dense bracken) Female seen down		D

Vantage Point Surveys														
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Sex/Age	Notes on habitat and activity	Comments	Surveyor
												below from VP 1, hovering and circling over large area. Was last seen heading Southeast behind brow of hill out of view.		
K060	13/09/2016	3	Kestrel	1	15:36	90	10	35	45			WD4, (Conifer plantation) H, (Heath and dense bracken) Juvenile seen hovering over area of juvenile forestry, moved slowly South hunting over area of heath, dived once into scrub to no avail before turning Northeast and disappeared out of sight.		D
K061	20/09/2016	2	Kestrel	1	16:22	135	15	45	85			H, (Heath and dense bracken) WD4, (Conifer plantation) Female seen hovering on edge of juvenile conifer plantation, moved West and hovering was once before continuing on west and then Southwest for a period of time.		D
K062	26/09/2016	1	Kestrel	1	12:38	40		40				H, (Heath and dense bracken) Male heading West across site, then turned Southwest behind brow of hill and visual was lost.		D
K063	26/09/2016	1	Kestrel	2	13:09	75		35	40			H, (Heath and dense bracken) Pair of juveniles seen circling and perched on		D

Vantage Point Surveys														
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Sex/Age	Notes on habitat and activity	Comments	Surveyor
												birch trees before moving off North off site into Large conifer tree on farm property		
K064	15/10/2016	3	Kestrel	1	12:02	40		10	30			WD4, (Conifer plantation) H, (Heath and dense bracken) Female seen hovering over area of scrub gradually moved North over juvenile forestry before last seen heading Northeast and visual was lost with distance.		D
K065	22/10/2016	1	Kestrel	1	09:32	170		75	95			H, (Heath and dense bracken) Individual seen hovering over area of dense grass for a period of time, zig zagging across section of site still hovering. Then moved North off site in direction of possible known nest site.		D
K066	20/12/2016	1	Kestrel	1	12:41	15		15			M	WS, (Scrub/ transitional woodland) Male observed heading Southwest, can be seen hovering briefly over area of scrub but visual lost soon after due terrain.		D
K067	20/12/2016	1	Kestrel	1	12:43	20		20			M	WS, (Scrub/ transitional woodland) Possibly same individual seen at 12.41 heading back Northeast, flew past VP. Individual the		D

Vantage Point Surveys														
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Sex/Age	Notes on habitat and activity	Comments	Surveyor
												turned eastwards and there visual was lost.		
K068	20/12/2016	1	Kestrel	2	12:45	25		25			F	WS, (Scrub/ transitional woodland) Female observed heading South directly past VP and continued onwards until visual was lost due to terrain.		D
K069	23/01/2017	2	Kestrel	1	12:21	40		40			M	WS, (Scrub/ transitional woodland) Male observed hovering, hunting over area of rough grassland. Slowly moving west until individual flew off Northwest behind brow of hill.		D
K070	07/02/2017	3	Kestrel	1	11:02	35			35			WD4, (Conifer plantation) Male observed heading west across area of conifer plantation being harassed by grey crows, disappearing over more mature plantation then.		D
K071	10/02/2017	1	Kestrel	1	11:11	110	70	40				Female observed perched on large boulder, flew off south briefly and perched again. Female then flew off Northwest to neighbouring site over area of felled forestry.		D
K072	10/02/2017	1	Kestrel	1	13:44	45		45				Female observed hovering in front of VP, moved off Southwest before hovering		D

Vantage Point Surveys														
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Sex/Age	Notes on habitat and activity	Comments	Surveyor
												again for a period of time and then gradually moved off south until visual was lost.		

Breeding Bird Surveys							
Obs. Ref. No.	Survey Date	Time of observation	Species	Number of birds	Notes on Habitat and Activity	Comments	Surveyor
K001	15/04/2015	12:42	Kestrel	1	Seen hovering, hunting		D
K038	02/06/2015	10:52	Kestrel	1	Female perched on top of large rock before being disturbed	On site	D
K002	16/06/2015	11:02	Kestrel	1	Male seen hovering over rough grassland before heading East	On site	D
K003	16/06/2015	15:33	Kestrel	1	Female seen hovering over an area of juvenile conifers	On site	D
K004	16/06/2015	16:21	Kestrel	1	Female seen flying east in direction carrying prey item	On site	D
K005	09/07/2015	12:26	Kestrel	1	Male seen hovering over area of rough grassland.	on site	D
K006	09/07/2015	14:21	Kestrel	1	Male seen hovering over juvenile forestry.	on site	D
K007	09/07/2015	15:36	Kestrel	1	Female seen flying Northwest over mature conifer plantation.	on site	D
K008	17/09/2015	09:48	Kestrel	1	Female perched initially along rock edge, disturbed and flew off West initially before turning North.	On site	D
K009	17/09/2015	10:18	Kestrel	1	Juvenile flying low to the ground, heading West over area of rocky escarpment.	On site	D
K010	17/09/2015	12:45	Kestrel	1	Juvenile flying South heading over farmland then over mature conifer plantation.	On site	D
K011	17/09/2015	14:24	Kestrel	1	Female hovering over area of Heather before moving heading off west	On site	D
K012	17/09/2015	15:22	Kestrel	1	Juvenile Male seen hovering area of juvenile forestry, before heading off west	On site	D
K013	17/09/2015	15:34	Kestrel	1	Juvenile seen flying Northeast over mature conifer plantation.	On site	D

Breeding Bird Surveys							
Obs. Ref. No.	Survey Date	Time of observation	Species	Number of birds	Notes on Habitat and Activity	Comments	Surveyor
K014	15/04/2016	14:33	Kestrel	1	Male seen hovering over area of juvenile conifer forestry before moving off Northeast.	Hovering/hunting on site	D
K015	23/05/2016	09:21	Kestrel	1	Male seen in Ash tree looking over of conifers, gradually moved northwest and finally west. Perched in a number of trees along the way.	Perch Hunting on site	D
K016	23/05/2016	13:38	Kestrel	1	Male seen hovering over area of rough grassland before carrying on Northeast.	Hunting on site	D
K017	23/05/2016	16:03	Kestrel	1	Male seen hovering over area rough grassland, next to deciduous woodland before moving Northeast.	Hunting on site	D
K018	31/05/2016	17:26	Kestrel	1	Male seen hovering over area of juvenile conifers before moving west across site.	Hunting on site	D
K019	26/06/2016	09:31	Kestrel	1	Juvenile seen perched on edge of farmland. Moved westwards and attempted to hover once. Perched again before flying off west heading offsite.	Off	D
K020	26/06/2016	12:15	Kestrel	1	Individual can be heard calling out from area of farmland but no visual made.	Off	D
K021	26/06/2016	12:37	Kestrel	1	Male seen flying low over area of grassland before disappearing into area of Scots Pine.	Off	D
K022	30/06/2016	10:16	Kestrel	2		On	D
K023	30/06/2016	14:28	Kestrel	1	Male hovering along edge of juvenile conifers making its way eastwards and heading offsite.	On	D
K024	18/07/2016	11:36	Kestrel	1	Juvenile circling area of possible nest site, calling out in the area before then heading Northwest across farmland.	Off	D
K025	18/07/2016	11:36	Kestrel	1	Second individual calling out from conifer tree, flew up out of tree and started circling over area of farmland in close counters with 1st individual. Last seen circling over area of farmland.	Off	D
K026	18/07/2016	16:12	Kestrel	1	Female seen hovering over area of rough grassland/heather, dropped down into vegetation but no prey item retrieved and then turned Northeast sharply.	On	D
K027	18/07/2016	17:02	Kestrel	1	Female heard calling out initially, visual made of individual flying into area of pine trees where she was seen perched and calling out for a period of time.	Off	D
K028	18/07/2016	17:05	Kestrel	2	Juvenile can be heard calling out from large pine where they were communicating with female nearby, 1st individual flew South briefly before	Off	D

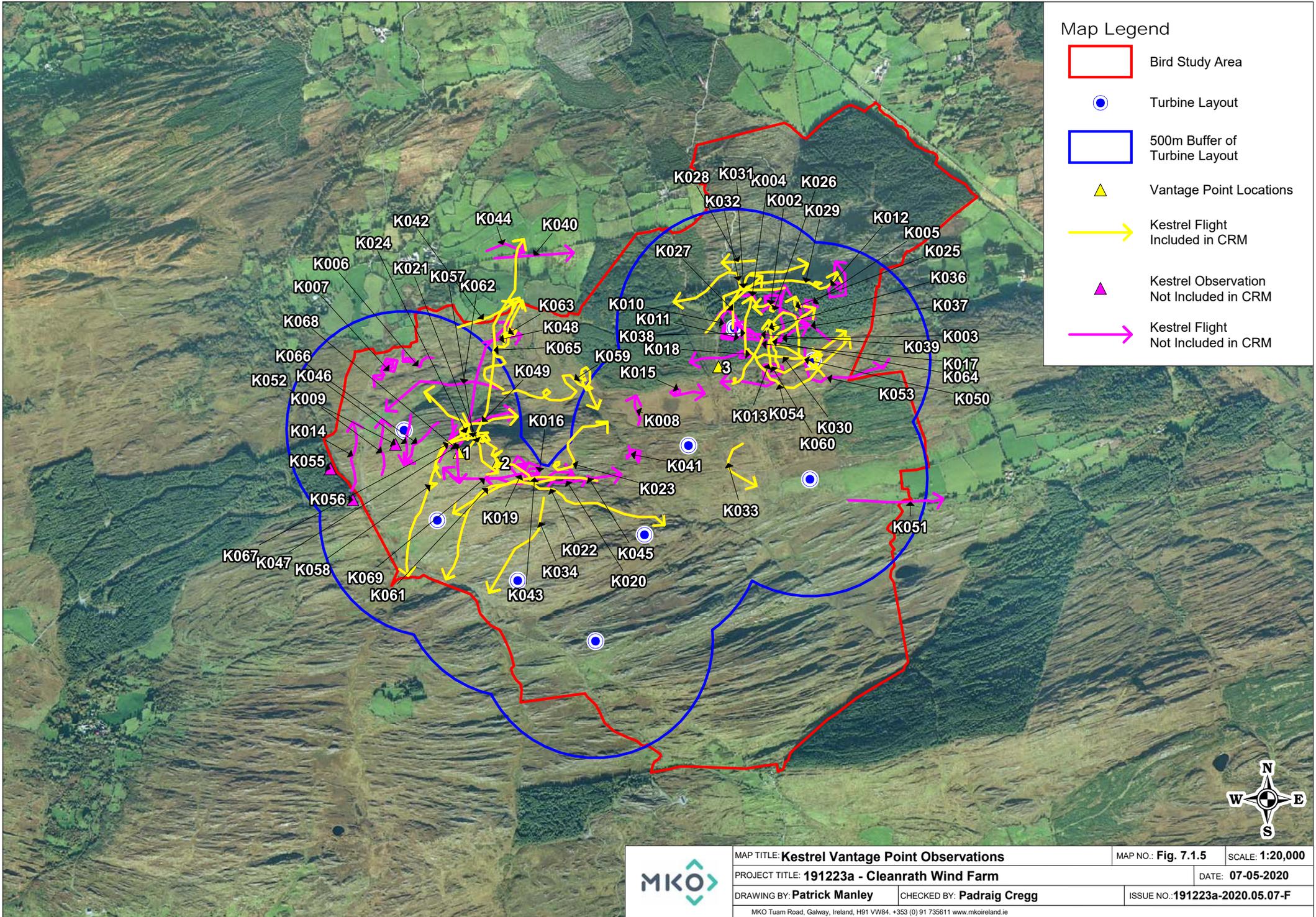
Breeding Bird Surveys							
Obs. Ref. No.	Survey Date	Time of observation	Species	Number of birds	Notes on Habitat and Activity	Comments	Surveyor
					being joined by second individual and both flew Northwest where visual was then lost.		
K029	18/07/2016	17:05	Kestrel	1	Possibly the same female can be heard calling out abruptly in area close to known area where juvenile was just seen.	Off	D
K030	28/07/2016	11:07	Kestrel	1	Juvenile seen hovering over area of heather, moved slowly southwest heading away from site boundary.	On	D
K031	28/07/2016	11:18	Kestrel	1	Juvenile seen hovering over area of dense vegetation before moving North and losing visual.	On	D
K032	28/07/2016	11:20	Kestrel	1	Another individual seen hovering just on the site boundary briefly. Made its way west heading offsite	On	D
K033	28/07/2016	11:28	Kestrel	2	Two juveniles headed back onsite heading east, more than likely the two who are previously mentioned. Head back onsite and pair can be seen circling and hovering over of site before losing visual with distance.	On	D
K034	28/07/2016	16:02	Kestrel	1	Female hovering over area of scrub just offsite, moved Southeast before visual was lost with distance.	Off	D
K035	17/08/2016	09:42	Kestrel	1	Male perched upon boulder, flew Southwest due to my presence then did a U-turn and headed back east.	On	D
K036	17/08/2016	11:51	Kestrel	1	Male seen perched on dead tree perch hunting, over area of clear fell forestry. Remained perched for a period of 4-5 mins before flying off Northeast.	Off	D
K037	17/08/2016	12:39	Kestrel	1	Male seen perched on birch tree, remained there for 2-3 mins flew off northwest over juvenile forestry/heath.	On	D

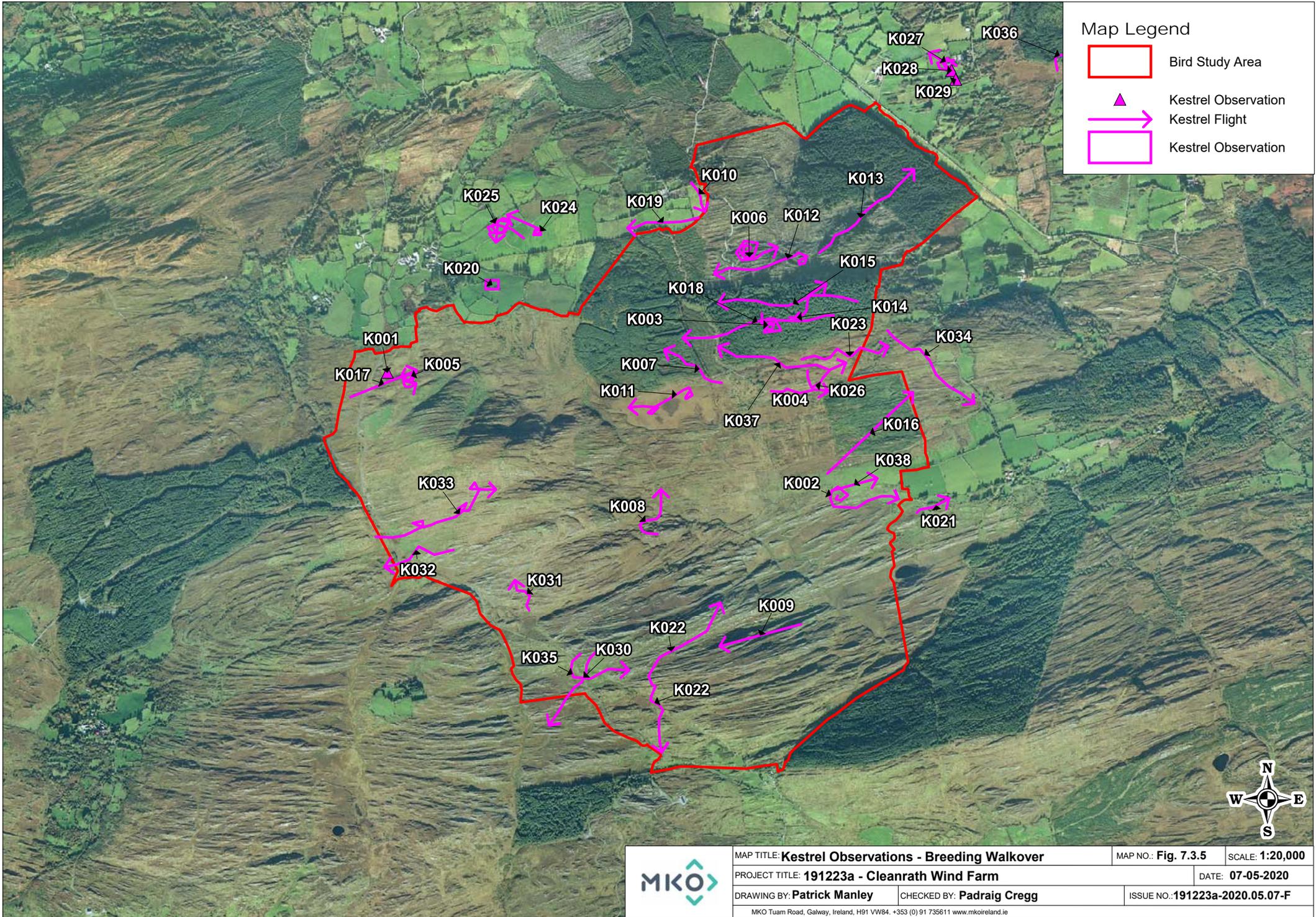
Breeding Raptor Surveys								
Obs. Ref. No.	Date	RVP	Species Name	No. of Birds	Time of flight	Notes on habitat and activity	Comments	Surveyor
K001	11/05/2016		Kestrel	1	09:12		Hunting Off site	D
K002	19/05/2016		Kestrel	1	11:12		Hunting off site	D
K003	19/05/2016		Kestrel	1	15:34		Hunting off site	D
K004	07/06/2016		Kestrel	1	13:44		Off site	D

Breeding Raptor Surveys								
Obs. Ref. No.	Date	RVP	Species Name	No. of Birds	Time of flight	Notes on habitat and activity	Comments	Surveyor
K005	07/06/2016		Kestrel	1	15:17		Off site	D
K006	07/06/2016		Kestrel	1	16:48		Off site	D
K007	22/06/2016		Kestrel	1	13:12		Off site	D
K008	08/07/2016		Kestrel	1	09:12		Hunting off site	D
K009	22/07/2016		Kestrel	1	12:11		Off site	D
K010	22/07/2016		Kestrel	1	13:05		Off site	D

Winter Transect Surveys							
Obs. Ref. No.	Survey Date	Time of observation	Species	Number of birds	Notes on Habitat and Activity	Comments	Surveyor
K001	21/11/2016	10:33:00	Kestrel	1	Male seen hovering over area of rough grassland. Moving Southwest slowly, seen diving down into vegetation, not observed from this point.	Off	D
K002	21/11/2016	13:22:00	Kestrel	1	WD4, (Conifer plantation) Male observed perch hunting in area of felled forestry, observed moving from perch to perch before finally flying off west.	Off	D
K003	12/01/2017	12:14:00	Kestrel	1	WD4, (Conifer plantation) Female observed hovering along edge of improved grassland just off-site boundary heading North before turning Northwest.	Off	D
K004	24/01/2017	12:47:00	Kestrel	1	E, (Exposed rock and disturbed ground) Male observed hovering, hunting along edge of juvenile forestry before moving off north.	On	D
K005	14/02/2017		Kestrel	1	Female observed hunting over area rough grassland. Slowly moving west and constantly hovering before last seen heading north.	On	D
K006	21/02/2017		Kestrel	1	Female observed flying southeast over conifer plantation calling out.	On	D

Incidental Observations					
Date	Survey Type	Species	Number of Individuals	Notes	Surveyor
24/03/2016	Red grouse Survey	Kestrel	1	Hunting	PC
24/03/2016	Red grouse Survey	Kestrel	1	Hunting	PC

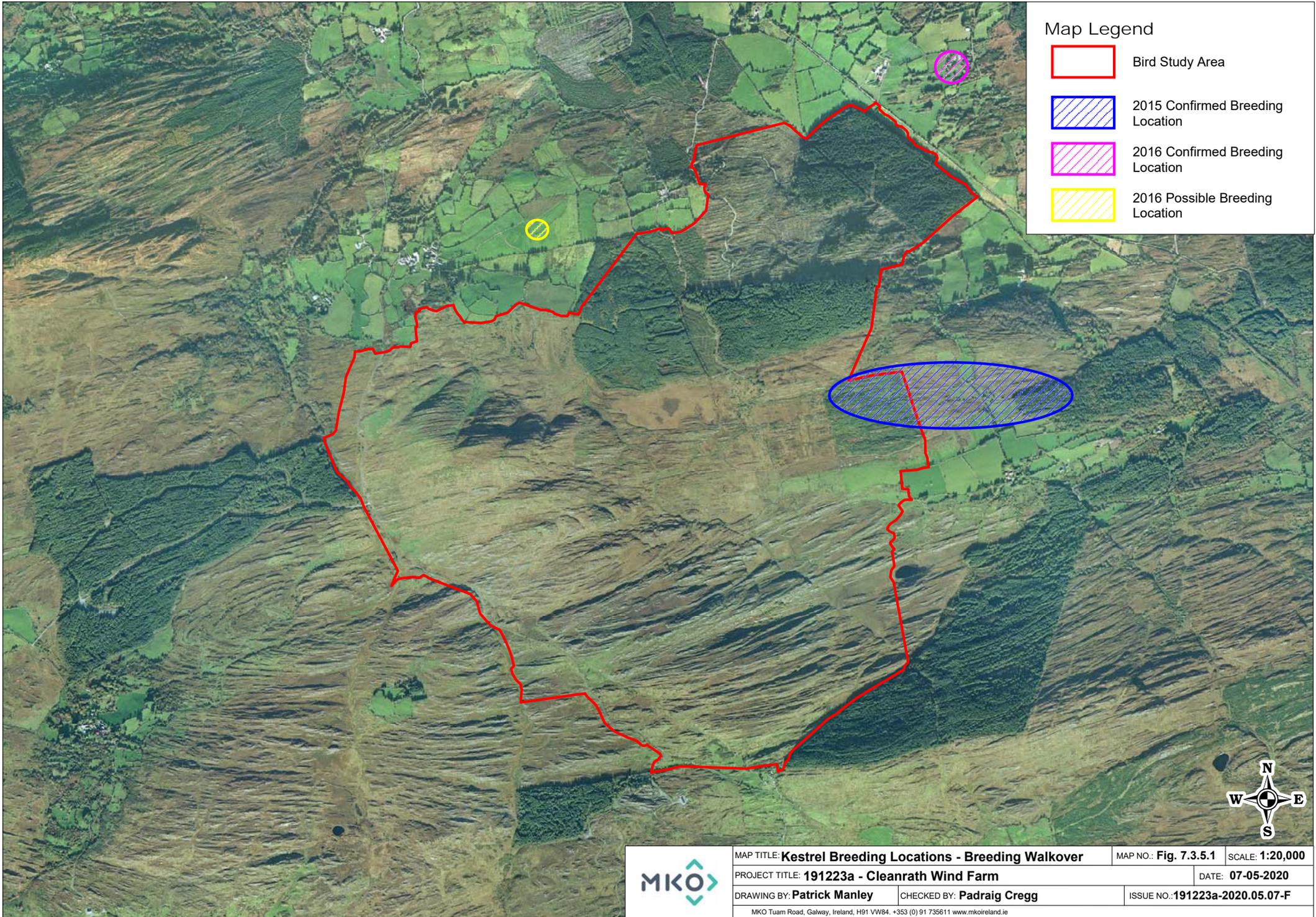


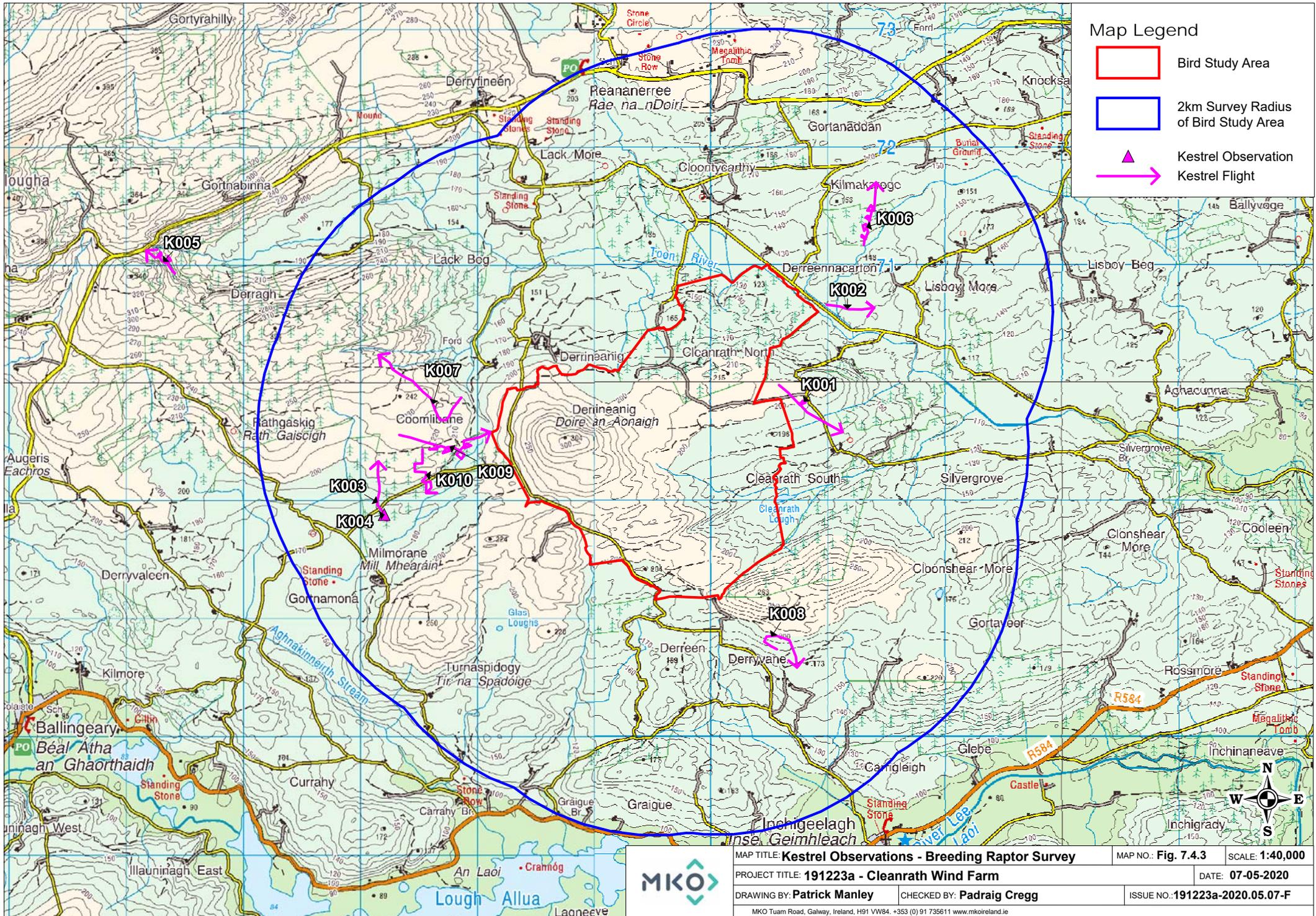


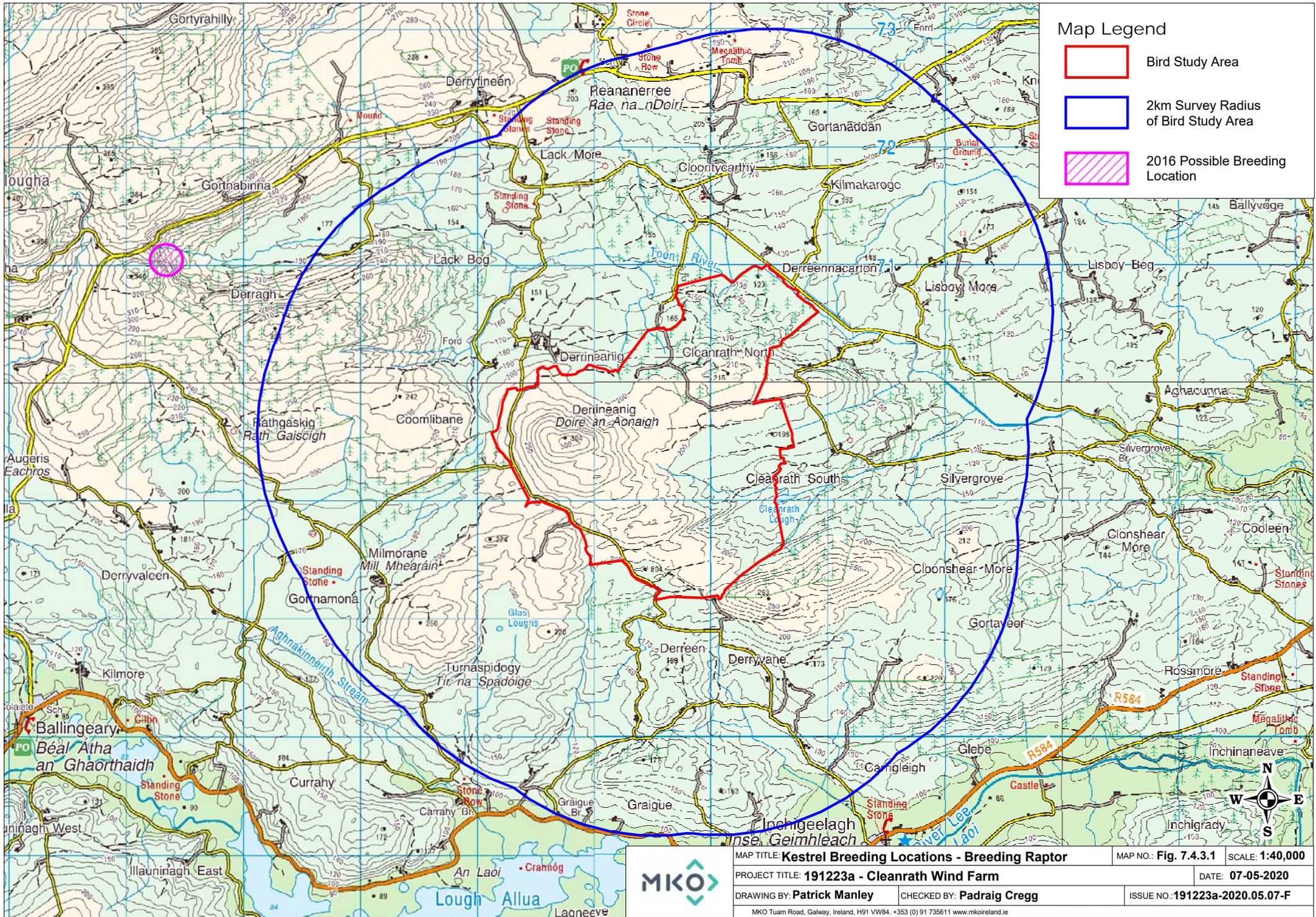
Map Legend

- Bird Study Area
- ▲ Kestrel Observation
- Kestrel Flight
- Kestrel Observation

	MAP TITLE: Kestrel Observations - Breeding Walkover		MAP NO.: Fig. 7.3.5	SCALE: 1:20,000	
	PROJECT TITLE: 191223a - Cleanrath Wind Farm			DATE: 07-05-2020	
	DRAWING BY: Patrick Manley		CHECKED BY: Padraig Cregg	ISSUE NO.: 191223a-2020.05.07-F	
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie				







Map Legend

- Bird Study Area
- 2km Survey Radius of Bird Study Area
- 2016 Possible Breeding Location

MAP TITLE: Kestrel Breeding Locations - Breeding Raptor		MAP NO.: Fig. 7.4.3.1	SCALE: 1:40,000
PROJECT TITLE: 191223a - Cleanrath Wind Farm		DATE: 07-05-2020	
DRAWING BY: Patrick Manley	CHECKED BY: Padraig Cregg	ISSUE NO.: 191223a-2020.05.07-F	
<small>MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie</small>			

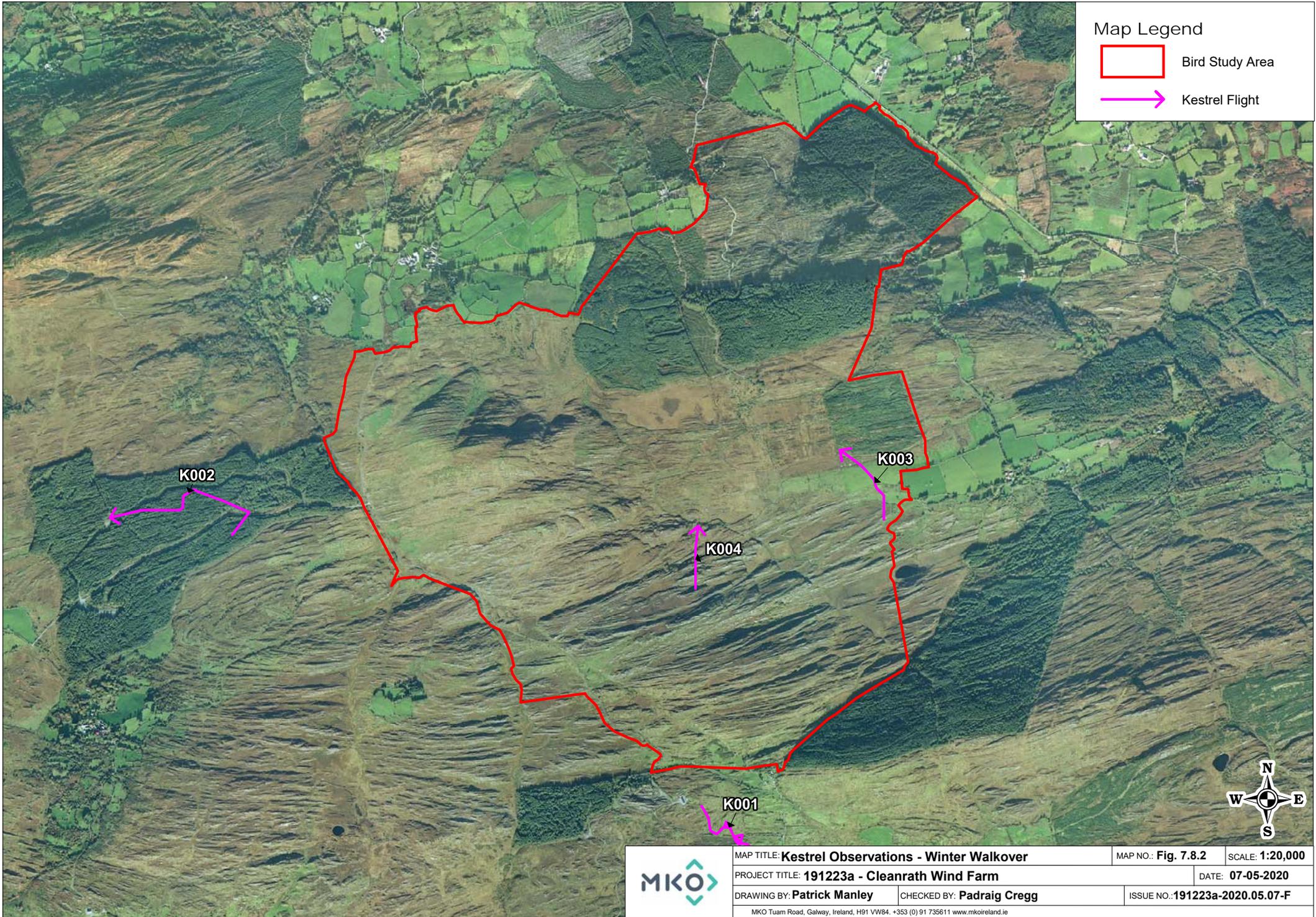


Table 10 Sparrowhawk Survey Data

Vantage Point Surveys														
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Sex/Age	Notes on habitat and activity	Comments	Surveyor
SH001	23/04/2015	3	Sparrowhawk	1	11:10:00				0			Flying N		D
SH002	21/05/2015	2	Sparrowhawk	1	12:50:00				0		F	Female seen flying to the ground heading east		D
SH003	18/06/2015	3	Sparrowhawk	1	08:05:00				0		F	Female seen flying low to ground in pursuit of small passerine		D
SH004	18/06/2015	3	Sparrowhawk	1	13:30:00				0		M	Male perched in willows before flying south low the ground		D
SH005	23/07/2015	3	Sparrowhawk	1	12:10:00				0			Individual flying over juvenile plantation before perching in Ash tree		D
SH006	29/10/2015	3	Sparrowhawk	1	15:23:00	5			5					JC

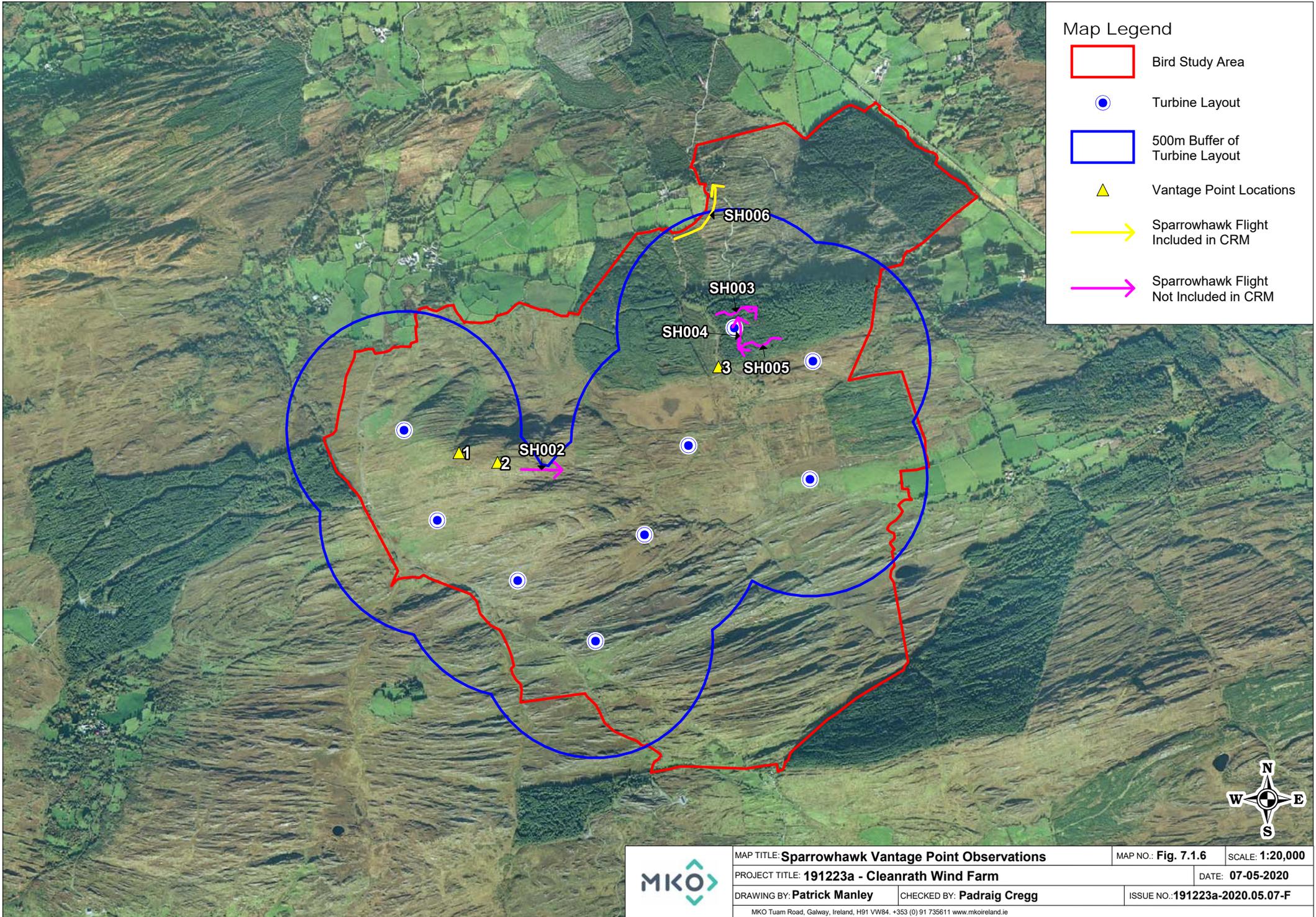
Breeding Bird Surveys							
Obs. Ref. No.	Survey Date	Time of observation	Species	Number of birds	Notes on Habitat and Activity	Comments	Surveyor
SH001	02/06/2015	13:37	Sparrowhawk	1	Seen flying low over juvenile conifer plantation	On site	D
SH002	16/06/2015	13:55	Sparrowhawk	1	Male seen flying Southwest in direction of juvenile conifer plantation	On site	D
SH003	09/07/2015	14:39	Sparrowhawk	1	Individual flying east over juvenile forestry before perching in silver birch tree for some time.	on site	D
SH004	19/08/2015	09:37	Sparrowhawk	1	Female seen perched on fence post, before flying off east over recently planted conifer planation.	On site	D

Breeding Bird Surveys							
Obs. Ref. No.	Survey Date	Time of observation	Species	Number of birds	Notes on Habitat and Activity	Comments	Surveyor
SH005	17/09/2015	09:29	Sparrowhawk	1	Female flying from East direction, circling and harassing meadow pipits before diving down into gully and losing visual.	On site	D
SH006	17/09/2015	12:35	Sparrowhawk	1	Individual initially perched before being disturbed before flying off heading South.	On site	D
SH007	15/04/2016	07:58	Sparrowhawk	1	Individual seen flying low over area of juvenile forestry heading Northwest before turning back South.	Hunting off site	D
SH008	23/05/2016	15:03	Sparrowhawk	1	Male seen chasing after passerines behind farm building disappearing into thicket.	Hunting off site	D
SH009	31/05/2016	19:12	Sparrowhawk	1	Male seen flying low over area of heath heading east and losing visual as it made its way into thicket of trees.	Hunting off site	D
SH010	28/07/2016	09:34	Sparrowhawk	3	Group of juveniles can be heard calling out from dense conifer plantation. Brief visuals were made as individuals scanned across section of forestry but for the large part birds were predominantly heard calling out. Possible nest site inside.	Off	D
SH011	28/07/2016	13:41	Sparrowhawk	1	Male seen feeding on passerine on dead tree, disturbed by my presence, individual flew off north briefly into forestry plantation.	On	D

Breeding Raptor Surveys								
Obs. Ref. No.	Date	RVP	Species Name	No. of Birds	Time of flight	Notes on habitat and activity	Comments	Surveyor
SH001	17/05/2016		Sparrowhawk	1	09:38		Harassed/flying off site	D
SH002	17/05/2016		Sparrowhawk	1	12:27		Perched/Flying on site	D
SH003	15/06/2016		Sparrowhawk	1	08:36		Off site	D
SH004	22/06/2016		Sparrowhawk	1	11:19		Off site	D
SH005	22/07/2016		Sparrowhawk	1	08:46		Off site	D
SH006	22/07/2016		Sparrowhawk	1	09:04		Off site	D

Winter Transect Surveys							
Obs. Ref. No.	Survey Date	Time of observation	Species	Number of birds	Notes on Habitat and Activity	Comments	Surveyor
SH001	28/03/2016	14:47:00	Sparrowhawk	1	Individual seen travelling east along edge of juvenile conifer plantation before swooping into conifer plantation.	On Site	D
SH002	05/12/2016	14:15:00	Sparrowhawk	1	H, (Heath and dense bracken) Male observed perched on fence post, flew off east across area of scrub due to my presence.	Off	D
SH003	12/01/2017	10:45:00	Sparrowhawk	1	WD4, (Conifer plantation) Female observed hunting low over area of juvenile conifers, heading eastwards until visual was lost amongst willows.	On	D
SH004	14/02/2017		Sparrowhawk	1	Male observed perched on fence post before disappearing back into cover of conifers	On	D
SH005	21/02/2017		Sparrowhawk	1	Female observed hunting over the top pf conifer trees before diving into thicket.	On	D

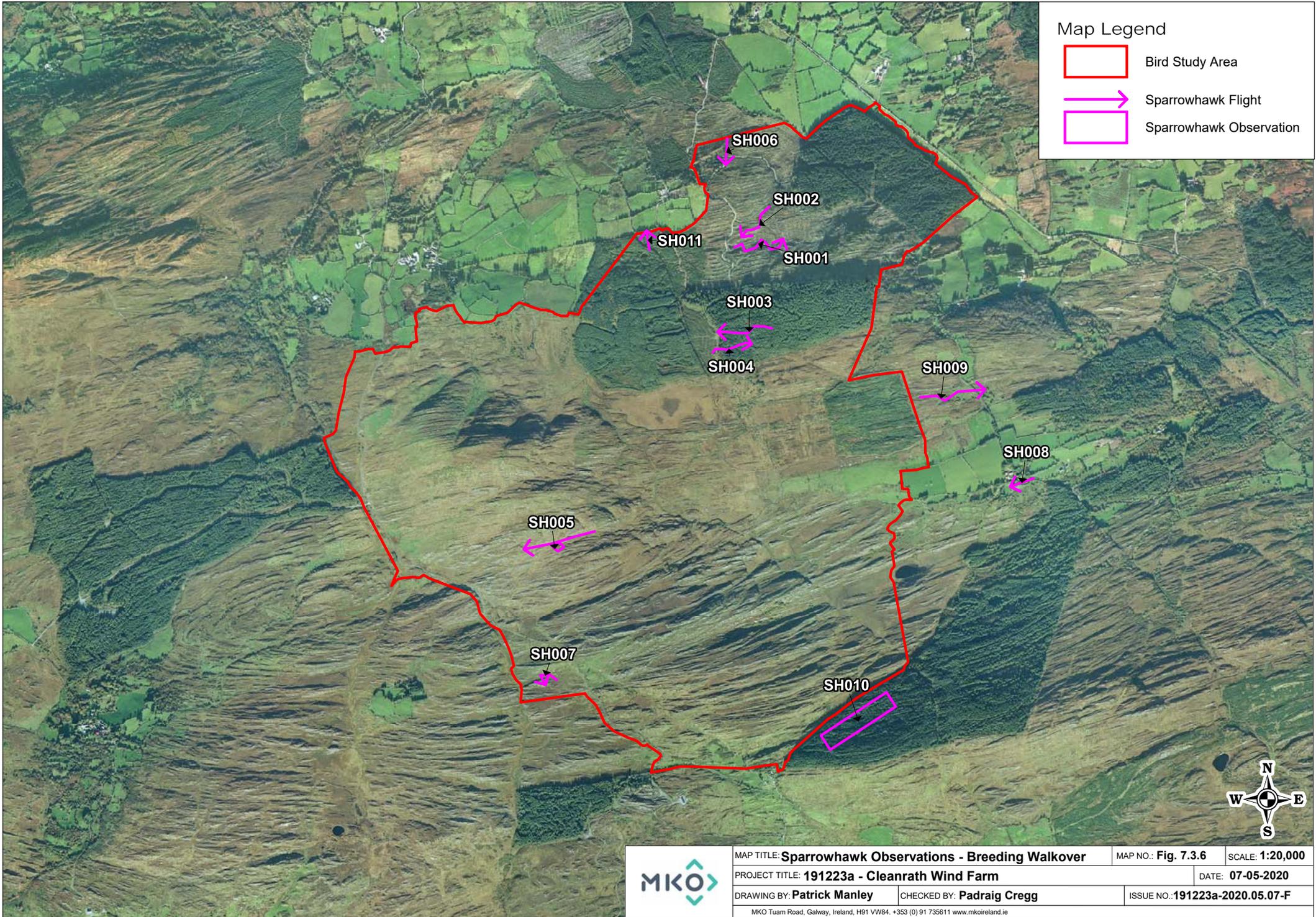
Incidental Records					
Date	Survey Type	Species	Number of Individuals	Notes	Surveyor
12/12/2016	HHVP	Sparrowhawk	1	Individual heard calling out during Hen Harrier roost survey in area of birch trees, no observation made.	D



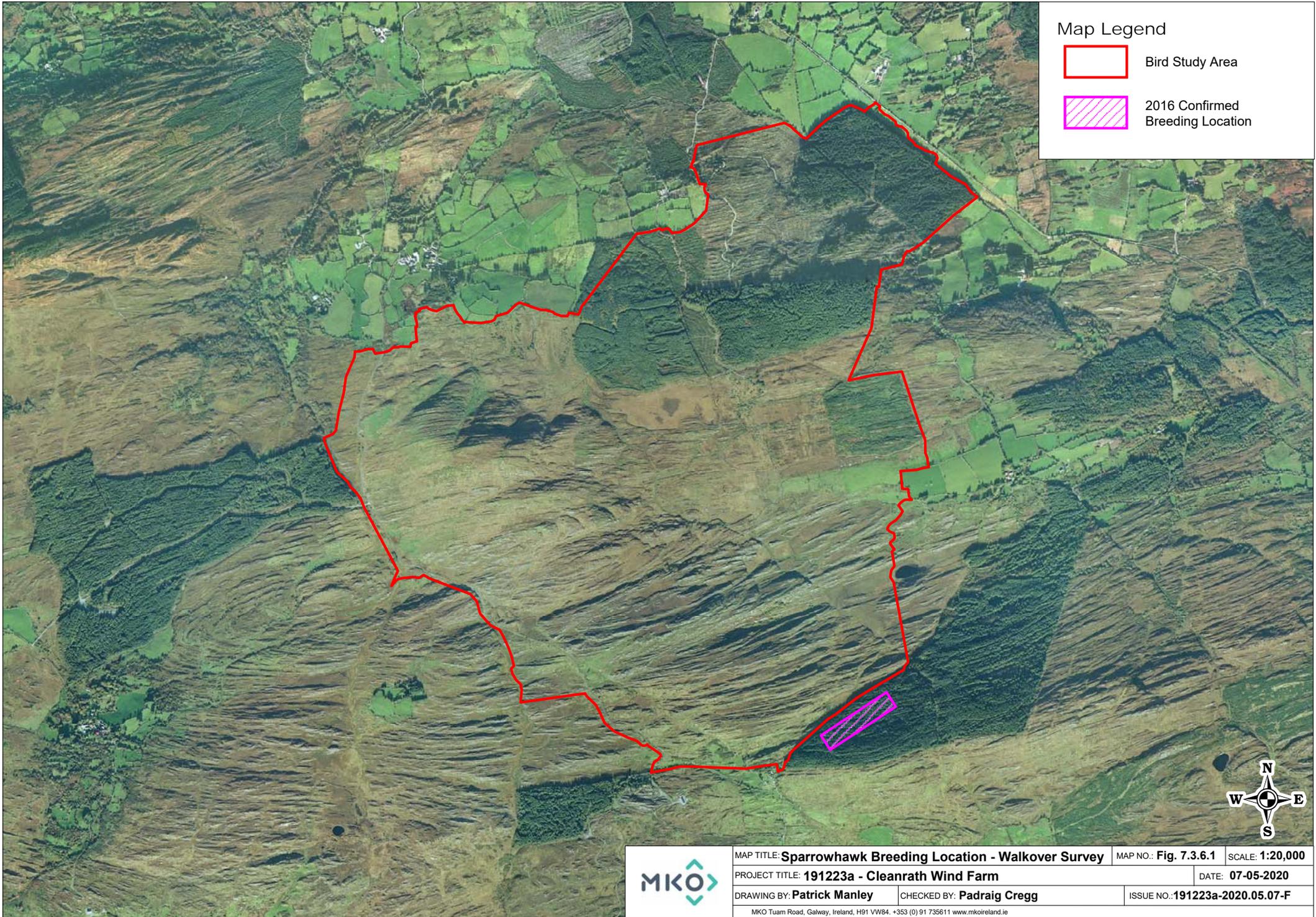
Map Legend

- Bird Study Area
- Turbine Layout
- 500m Buffer of Turbine Layout
- ▲ Vantage Point Locations
- Sparrowhawk Flight Included in CRM
- Sparrowhawk Flight Not Included in CRM

	MAP TITLE: Sparrowhawk Vantage Point Observations		MAP NO.: Fig. 7.1.6	SCALE: 1:20,000	
	PROJECT TITLE: 191223a - Cleanrath Wind Farm			DATE: 07-05-2020	
	DRAWING BY: Patrick Manley		CHECKED BY: Padraig Cregg	ISSUE NO.: 191223a-2020.05.07-F	
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie				



	MAP TITLE: Sparrowhawk Observations - Breeding Walkover	MAP NO.: Fig. 7.3.6	SCALE: 1:20,000
	PROJECT TITLE: 191223a - Cleanrath Wind Farm		DATE: 07-05-2020
	DRAWING BY: Patrick Manley	CHECKED BY: Padraig Cregg	ISSUE NO.: 191223a-2020.05.07-F
	<small>MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie</small>		

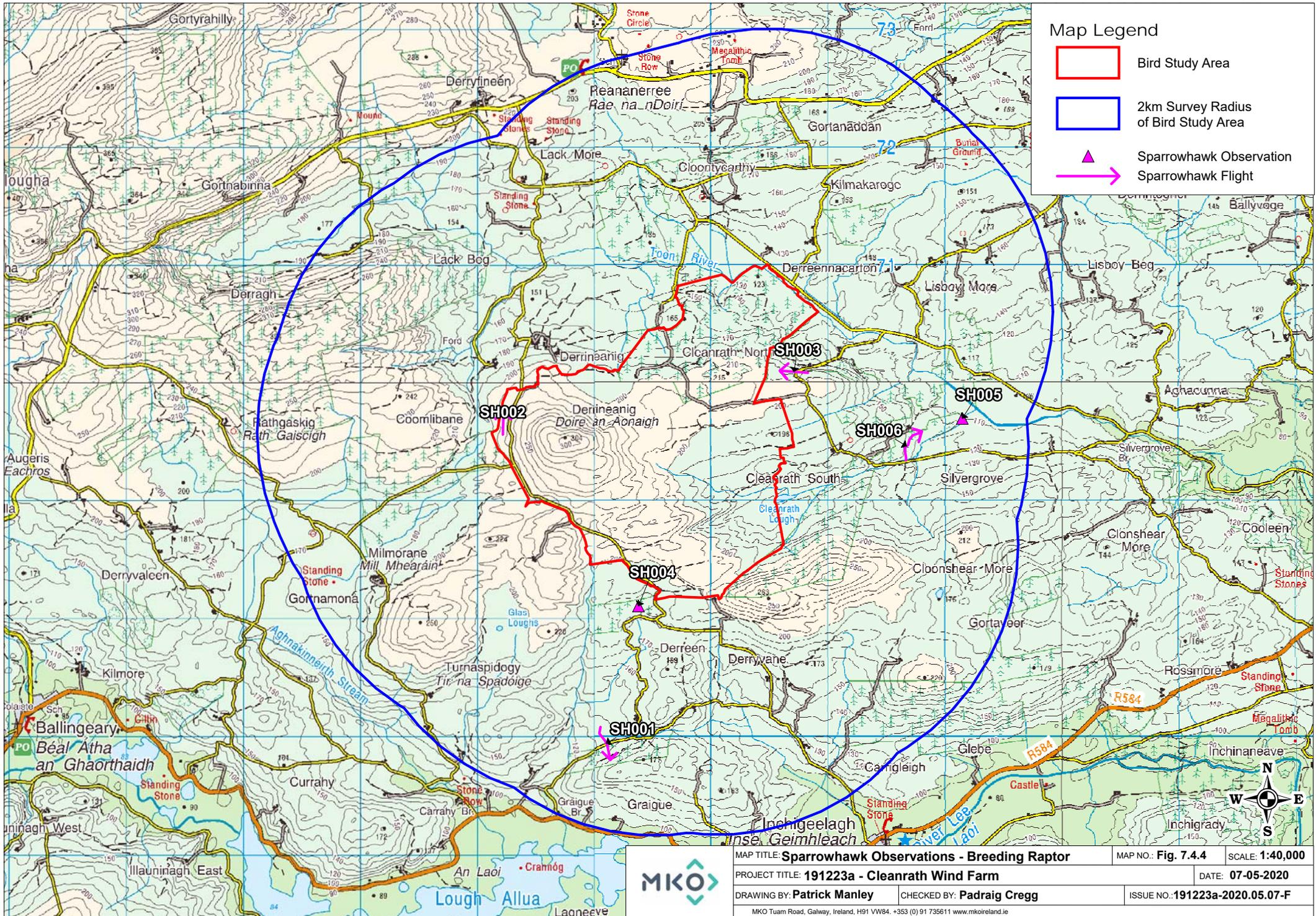


Map Legend

- Bird Study Area
- 2016 Confirmed Breeding Location



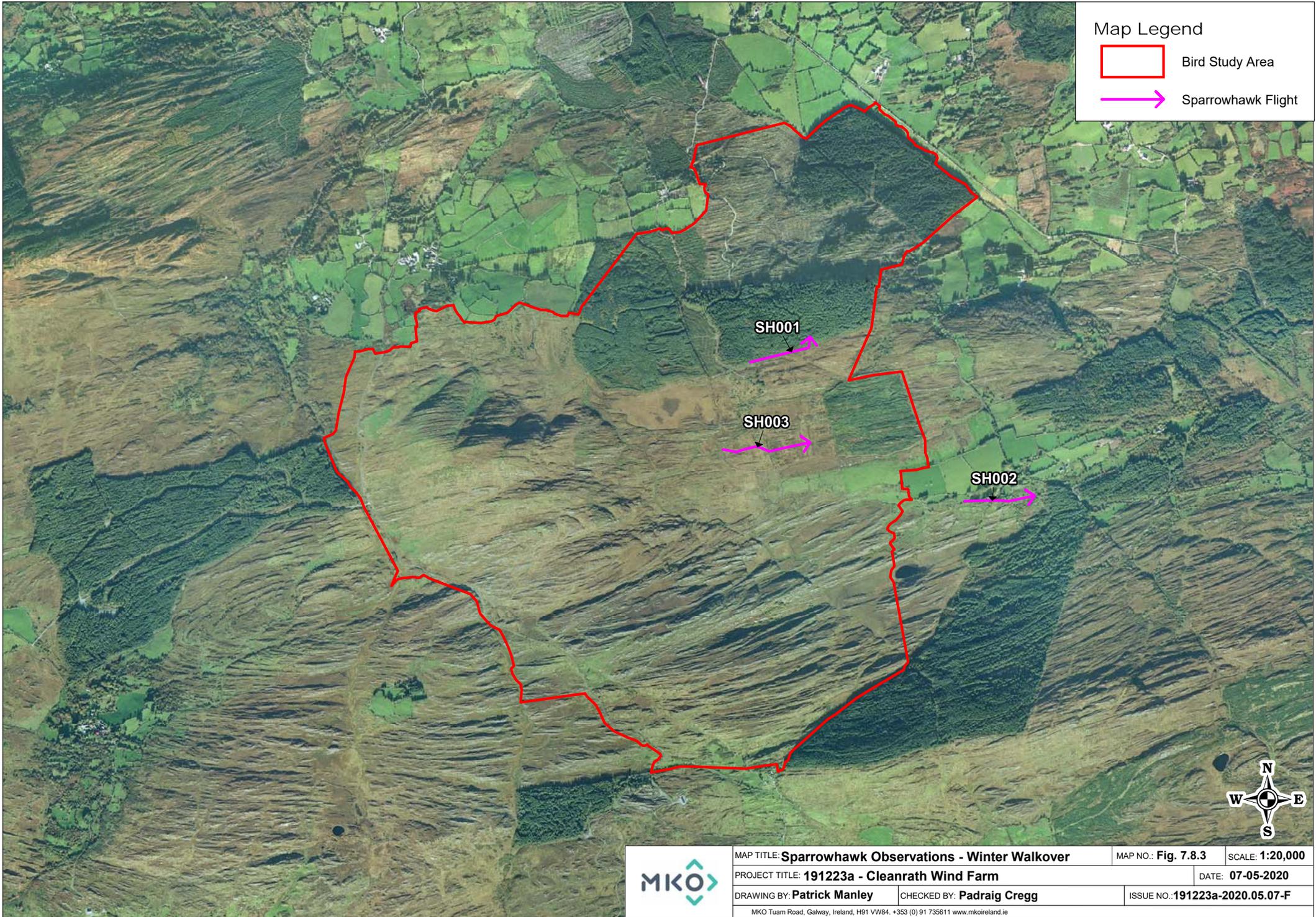
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	PROJECT TITLE: 191223a - Cleanrath Wind Farm			DATE: 07-05-2020	
	DRAWING BY: Patrick Manley		CHECKED BY: Padraig Cregg	ISSUE NO.: 191223a-2020.05.07-F	
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie				



Map Legend

- Bird Study Area
- 2km Survey Radius of Bird Study Area
- ▲ Sparrowhawk Observation
- Sparrowhawk Flight

MAP TITLE: Sparrowhawk Observations - Breeding Raptor		MAP NO.: Fig. 7.4.4	SCALE: 1:40,000
PROJECT TITLE: 191223a - Cleanrath Wind Farm		DATE: 07-05-2020	
DRAWING BY: Patrick Manley	CHECKED BY: Padraig Cregg	ISSUE NO.: 191223a-2020.05.07-F	
<small>MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie</small>			



Map Legend

- Bird Study Area
- ➔ Sparrowhawk Flight

SH001

SH003

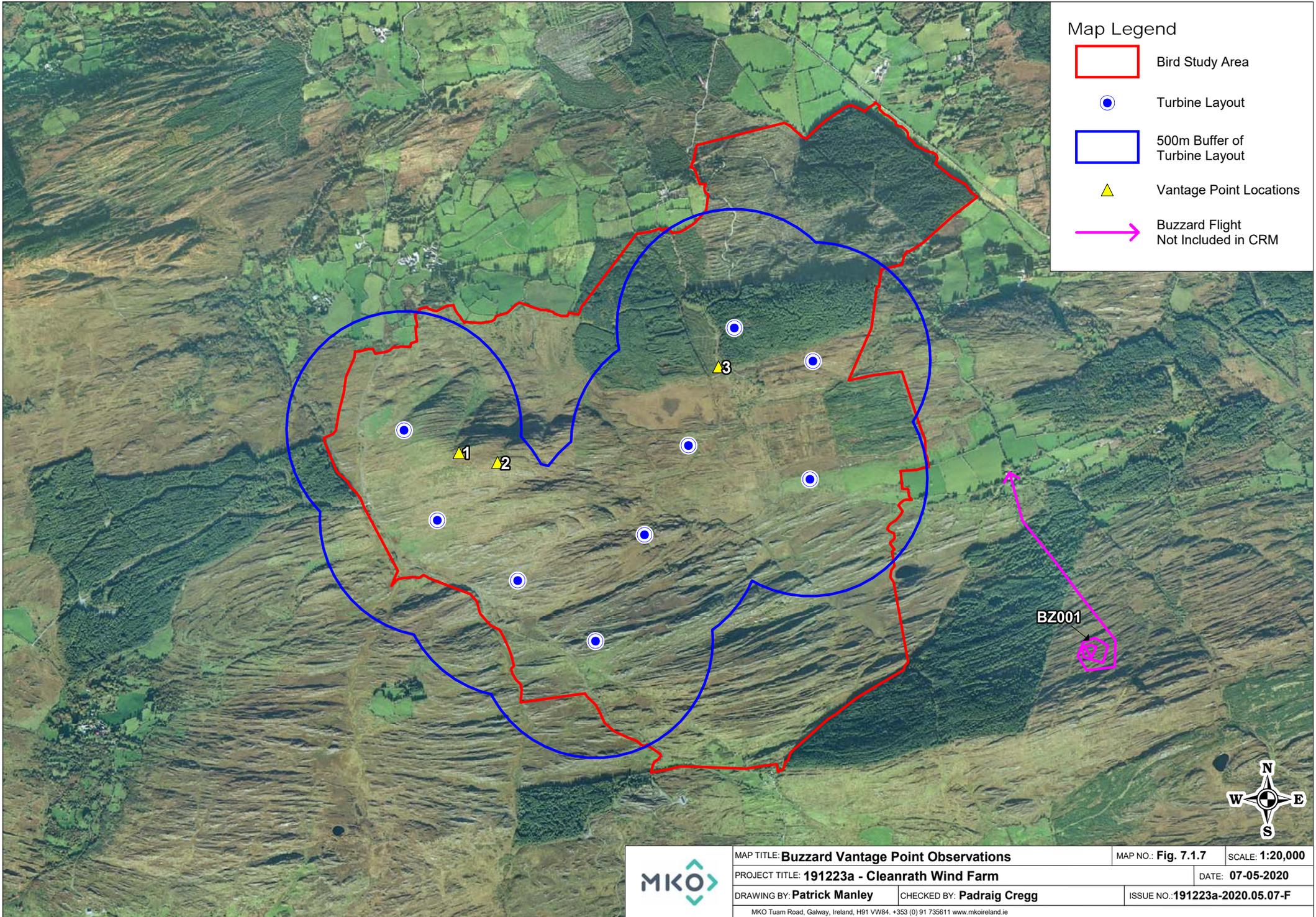
SH002



	MAP TITLE: Sparrowhawk Observations - Winter Walkover	MAP NO.: Fig. 7.8.3	SCALE: 1:20,000
	PROJECT TITLE: 191223a - Cleanrath Wind Farm		DATE: 07-05-2020
	DRAWING BY: Patrick Manley	CHECKED BY: Padraig Cregg	ISSUE NO.: 191223a-2020.05.07-F
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Table 11 Buzzard Survey Data

Vantage Point Surveys														
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Sex/Age	Notes on habitat and activity	Comments	Surveyor
BZ001	12/04/2016	2	Buzzard	1	13:06	380				380		E, (Exposed rock and disturbed ground) H, (Heath and dense bracken) Individual seen off site soaring quite high above area of conifer plantation, eventually started to swoop north in direction but lost visual trying to assess exact position over area of site.		D



Map Legend

- Bird Study Area
- Turbine Layout
- 500m Buffer of Turbine Layout
- ▲ Vantage Point Locations
- Buzzard Flight Not Included in CRM



	MAP TITLE: Buzzard Vantage Point Observations		MAP NO.: Fig. 7.1.7	SCALE: 1:20,000	
	PROJECT TITLE: 191223a - Cleanrath Wind Farm			DATE: 07-05-2020	
	DRAWING BY: Patrick Manley		CHECKED BY: Padraig Cregg	ISSUE NO.: 191223a-2020.05.07-F	
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie				

Table 12 Common Snipe Survey Data

Vantage Point Surveys														
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Sex/Age	Notes on habitat and activity	Comments	Surveyor
SN001	09/04/2015	1	Common Snipe	2	09:58:00	8	8		0			Disturbed		D
SN002	09/04/2015	2	Common Snipe	2	14:32:00	12	12		0			disturbed		D
SN003	21/04/2015	1	Common Snipe	1	08:55:00	26	26		0			Disturbed, flying N		D
SN004	16/12/2015	1	Common Snipe	1	09:42:00	15	15		0			GS4, (Wet grassland) E, (Exposed rock and disturbed ground) Disturbed from area of rushes and travelled south losing visual behind boulders.		D
SN005	16/12/2015	2	Common Snipe	1	12:51:00	15	15		0			GS4, (Wet grassland) E, (Exposed rock and disturbed ground) Individual disturbed from area of gorse and seen travelling south, calling out.		D
SN006	30/12/2015	2	Common Snipe	1	11:06:00	15	15		0			GS4, (Wet grassland) E, (Exposed rock and disturbed ground) Individual heard calling, flying east low to the ground heading East.		D
SN007	10/02/2016	2	Common Snipe	2	08:41:00	10	10		0			GS4, (Wet grassland) HH, (Heath) Individuals disturbed from gorse area, flew west low to the ground calling out before losing visual behind series of rocks.		D
SN008	15/02/2016	1	Common Snipe	1	09:02:00	20	20		0			GS4, (Wet grassland) HH, (Heath) Individua disturbed from area of heather, flew off west		D

Vantage Point Surveys														
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Sex/Age	Notes on habitat and activity	Comments	Surveyor
												flying low to the ground but lost visual as it flew over hill.		
SN009	08/03/2016	1	Common Snipe	1	11:01:00	5	5		0			H, (Heath and dense bracken) GS4, (Wet grassland) Individual disturbed close to area of VP1 flew off southeast briefly, landing near VP 2.		D
SN011	20/06/2016	3	Common Snipe	1	08:26	5	5				M	H, (Heath and dense bracken) Individual can be heard calling out from area scrub along edge of conifer plantation.		D
SN012	27/06/2016	3	Common Snipe	1	16:42	10	10					Individual heard drumming, visual made briefly heading east before dropping back down into scrub.		D
SN013	07/07/2016	3	Common Snipe	1	08:35	480	20	80	380		M	H, (Heath and dense bracken) Individual heard drumming initially, visual then made. Individual spent long period of time or rough grassland/heather circling and calling out before diving back into cover some time later.		D
SN014	15/10/2016	3	Common Snipe	1	13:22	10	10					WD4, (Conifer plantation) H, (Heath and dense bracken) Individual seen rising out along edge of forestry and moved east briefly before landing again further down, calling out.		D
SN015	24/11/2016	1	Common Snipe	1	11:23	5						WS, (Scrub/ transitional woodland) Individual seen rising		D

Vantage Point Surveys														
Obs. Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Sex/Age	Notes on habitat and activity	Comments	Surveyor
												up out of gorse and flew Northwest over brow of hill and disappeared.		
SN016	20/12/2016	2	Common Snipe	1	07:49	5	5					E, (Exposed rock and disturbed ground) Individual disturbed on way to VP, flew off east low to the ground calling out.		D
SN017	10/02/2017	1	Common Snipe	1	09:12	10	10					Individual initially heard calling out behind VP, heading Northeast close to ground cover.		D

Breeding Bird Surveys							
Obs. Ref. No.	Survey Date	Time of observation	Species	Number of birds	Notes on Habitat and Activity	Comments	Surveyor
SN001	15/04/2015	09:12	Common Snipe	2	Disturbed	On site	D
SN002	15/04/2015	11:39	Common Snipe	2	Disturbed	on site	D
SN003	15/04/2015	14:18	Common Snipe	2	Disturbed	on site	D
SN004	02/06/2015	14:56	Common Snipe	1	Disturbed along conifer edge	On site	D
SN006	16/06/2015	11:58	Common Snipe	2	Disturbed from Cover of small drainage ditch heading west.	On site	D
SN007	09/07/2015	08:47	Common Snipe	1	Individual can be heard calling while circling above area of wet grassland.	On site	D

Breeding Bird Surveys							
Obs. Ref. No.	Survey Date	Time of observation	Species	Number of birds	Notes on Habitat and Activity	Comments	Surveyor
SN008	09/07/2015	11:06	Common Snipe	1	Individual can be heard calling from edge of cut out in the bog.	on site	D
SN009	09/07/2015	12:02	Common Snipe	1	Individual can be seen and heard circling above area of willow thicket.	on site	D
SN010	19/08/2015	13:21	Common Snipe	2	Individuals disturbed from an area of bog dominated by heather.	on site	D
SN011	19/08/2015	15:16	Common Snipe	2	Individuals disturbed from area of willows along farm road.	on site	D
SN012	15/04/2016	12:10	Common Snipe	1	Individual disturbed from area of dense grassland and flew off Northwest calling out.	Calling on site	D
SN013	25/04/2016	15:12	Common Snipe	2	Pair disturbed from area of heath and continued east low over the ground.	Flying/calling on site	D
SN014	25/04/2016	15:36	Common Snipe	1	Individual can be heard calling out and brief visual made as individual seen travelling west.	Flying/calling on site	D
SN015	23/05/2016	09:35	Common Snipe	1	Individual can be heard calling out from area of heath/scrub	Calling out on site	D
SN016	23/05/2016	09:42	Common Snipe	1	Individual can be heard in mid-air calling out and seen circling area of heath, making the characteristic drumming call.	Calling out/Displaying on site	D
SN017	23/05/2016	11:02	Common Snipe	1	Individual can be heard calling out from area of dense willows.	Calling out on site	D
SN018	31/05/2016	13:55	Common Snipe	2	Two individuals can be heard calling out from area of heather/rushes, no visual made.	Perched/Calling out. On site	D
SN019	30/06/2016	08:21	Common Snipe	1	Individual disturbed from dense vegetation, flew off west, calling out.	Off	D
SN020	30/06/2016	13:02	Common Snipe	1	Individual disturbed from rough grassland, flew North briefly before diving back down into cover.	On	D
SN021	18/07/2016	11:27	Common Snipe	1	Individual heard calling out from dense area of vegetation, no visual made.	Off	D
SN022	18/07/2016	18:16	Common Snipe	1	Individual disturbed from thick vegetation, flew west briefly before dropping back down into vegetation.	On	D
SN023	28/07/2016	14:38	Common Snipe	1	individual can be heard calling out from section of forestry.	On	D

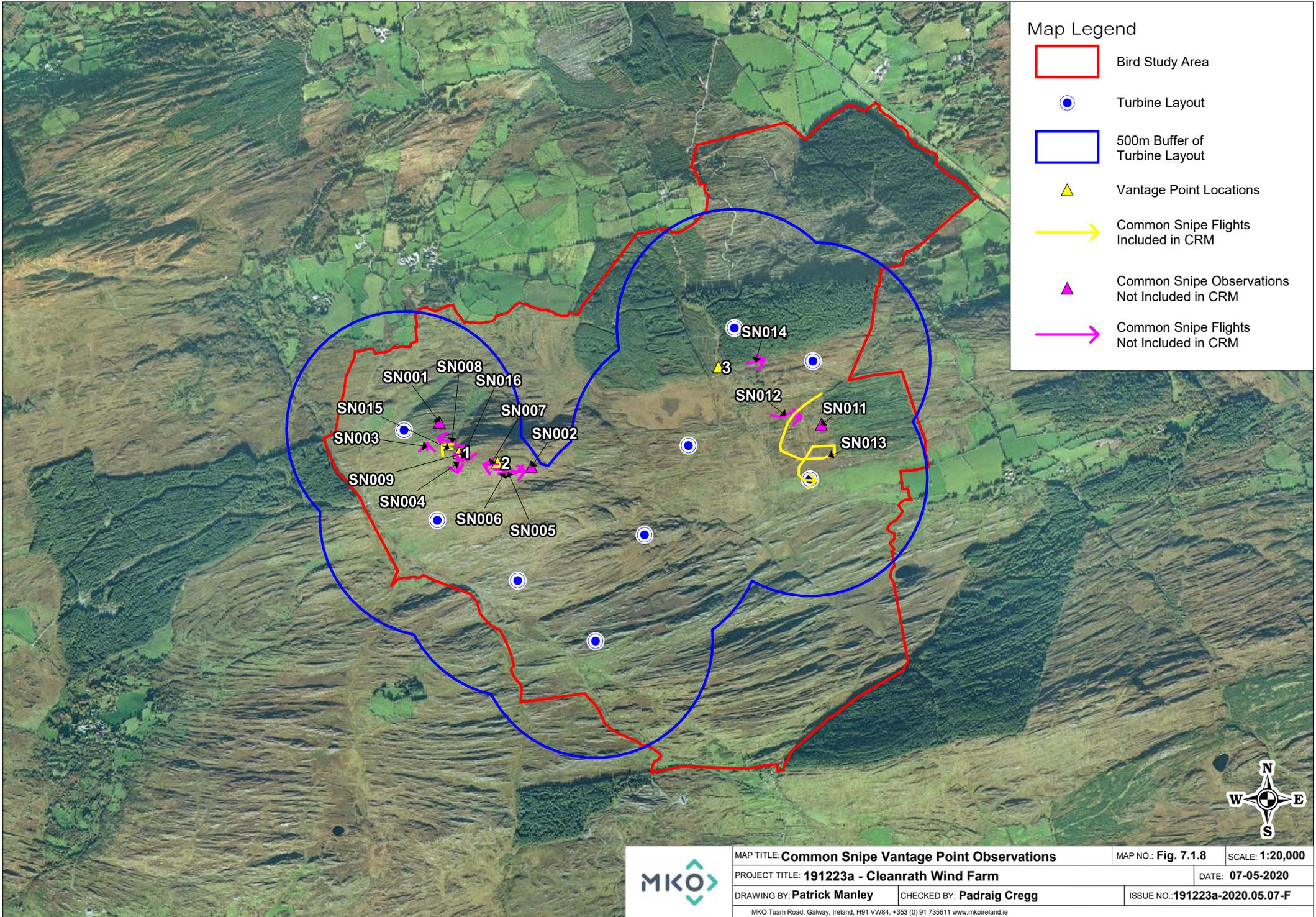
Breeding Bird Surveys							
Obs. Ref. No.	Survey Date	Time of observation	Species	Number of birds	Notes on Habitat and Activity	Comments	Surveyor
SN024	17/08/2016	10:49	Common Snipe	1	Individual heard calling out from area of willows/heather	On	D

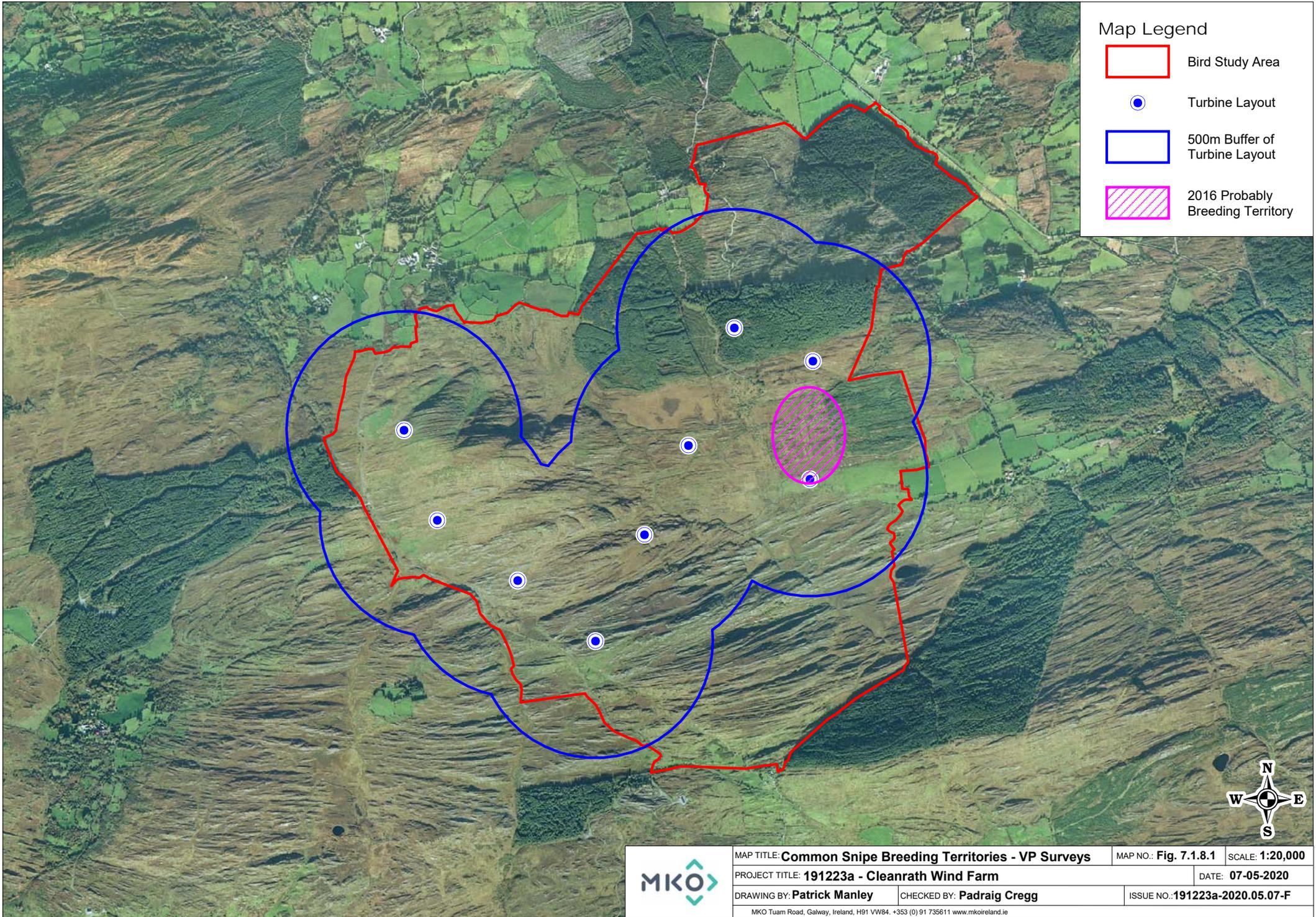
Winter Transect Surveys							
Obs. Ref. No.	Survey Date	Time of observation	Species	Number of birds	Notes on Habitat and Activity	Comments	Surveyor
SN001	21/11/2016	12:38:00	Common Snipe	1	E, (Exposed rock and disturbed ground) Individual disturbed from area of gorse, flew off Southwest briefly before perching again further down in area of site.	On	D
SN002	05/12/2016	09:33:00	Common Snipe	2	H, (Heath and dense bracken) Pair disturbed from area of tussocks, headed north into area of willows.	On	D
SN003	05/12/2016	12:30:00	Common Snipe	1	WD4, (Conifer plantation) Individual disturbed from area of juvenile forestry and flew off east calling out.	On	D
SN004	12/12/2016	10:42:00	Common Snipe	1	E, (Exposed rock and disturbed ground) Individual disturbed, flew off Southwest over of juvenile forestry heading from on site to off site.	On	D
SN005	12/12/2016	11:27:00	Common Snipe	2	E, (Exposed rock and disturbed ground) Two individuals disturbed from area of waterlogged terrain, flew off south initially and turned Southwest then. Pair observed doing a full circle of area and seen dropping down back in area close to which they were disturbed initially.	On	D
SN006	12/12/2016	11:29:00	Common Snipe	1	E, (Exposed rock and disturbed ground) Another individual disturbed close to where previous two were disturbed, flew off southwest initially before zig-zagging way back south and observed landing again in terrain.	On	D
SN007	12/12/2016	11:31:00	Common Snipe	1	E, (Exposed rock and disturbed ground) Individuals perched close to others flew off southwest and continued onwards until visual was lost with distance.	On	D
SN008	22/12/2016	09:22:00	Common Snipe	2	WS, (Scrub/ transitional woodland) Pair disturbed from area of gorse, flew off south calling out.	On	D
SN009	22/12/2016	11:55:00	Common Snipe	1	WS, (Scrub/ transitional woodland) Individual disturbed from area of willows, flew off east, calling out.	On	D
SN010	22/12/2016	12:21:00	Common Snipe	1	WS, (Scrub/ transitional woodland) Individual disturbed from area of gorse flew off north briefly before landing again further down in vegetation.	On	D

Winter Transect Surveys							
Obs. Ref. No.	Survey Date	Time of observation	Species	Number of birds	Notes on Habitat and Activity	Comments	Surveyor
SN011	12/01/2017	10:01:00	Common Snipe	2	WD4, (Conifer plantation) Pair disturbed from area of rushes, flew off North low over ground calling out.	On	D
SN012	12/01/2017	10:12:00	Common Snipe	1	WD4, (Conifer plantation) Individual disturbed from area of rushes, flew off west calling out before landing in area of heather further down.	On	D
SN013	12/01/2017	13:10:00	Common Snipe	1	WD4, (Conifer plantation) Individual disturbed from area of gorse flew off west, heading off site boundary.	On	D
SN014	24/01/2017	09:46:00	Common Snipe	2	E, (Exposed rock and disturbed ground) Pair disturbed offsite from area of rough pasture headed off southwest calling out.	Off	D
SN015	24/01/2017	10:12:00	Common Snipe	2	E, (Exposed rock and disturbed ground) Pair disturbed just off site, headed off west calling out.	Off	D
SN016	24/01/2017	12:13:00	Common Snipe	1	E, (Exposed rock and disturbed ground) Individual disturbed from area of rushes headed off west calling out.	On	D
SN017	14/02/2017		Common Snipe	2	Individuals disturbed from area of gorse, flew off south calling out.	On	D
SN018	14/02/2017		Common Snipe	1	Individual disturbed from edge of conifers, flew off north calling out.	On	D
SN019	14/02/2017		Common Snipe	1	Individual disturbed from area of willows, flew off west, before seen diving back into cover further down.	On	D
SN020	14/02/2017		Common Snipe	1	Individual disturbed and flew off west off-site boundary calling out	Off	D
SN021	21/02/2017		Common Snipe	2	Pair disturbed from area of willows and flew off southwest calling out.	On	D
SN022	21/02/2017		Common Snipe	2	Pair disturbed from area of severe flooding, took off southwest and did a full turn around and headed northwest	On	D
SN023	21/02/2017		Common Snipe	1	Individual disturbed from area of rushes flew off east calling out.	On	D
SN024	21/02/2017		Common Snipe	3	Individuals disturbed from edge of juvenile forestry and flew off south calling out.	On	D

Incidental Observations					
Date	Survey Type	Species	Number of Individuals	Notes	Surveyor
27/03/2015	Red grouse Survey	Common Snipe	2	Flushed	PC
24/03/2016	Red grouse Survey	Common Snipe	1	Flushed	PC
24/03/2016	Red grouse Survey	Common Snipe	1	Flushed	PC

Incidental Observations					
Date	Survey Type	Species	Number of Individuals	Notes	Surveyor
23/03/2017	Red grouse Survey	Common Snipe	2	20944 69675	



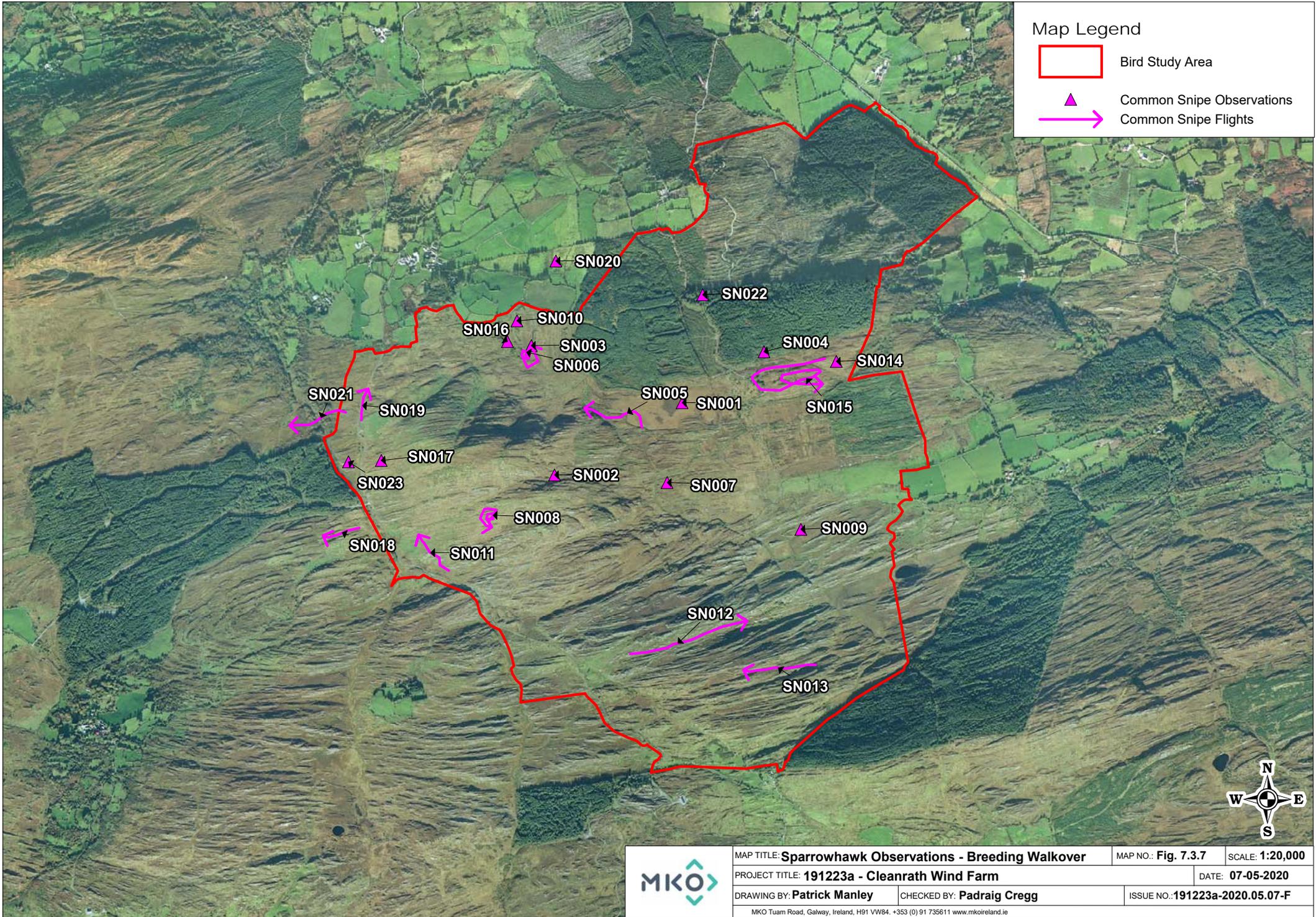


Map Legend

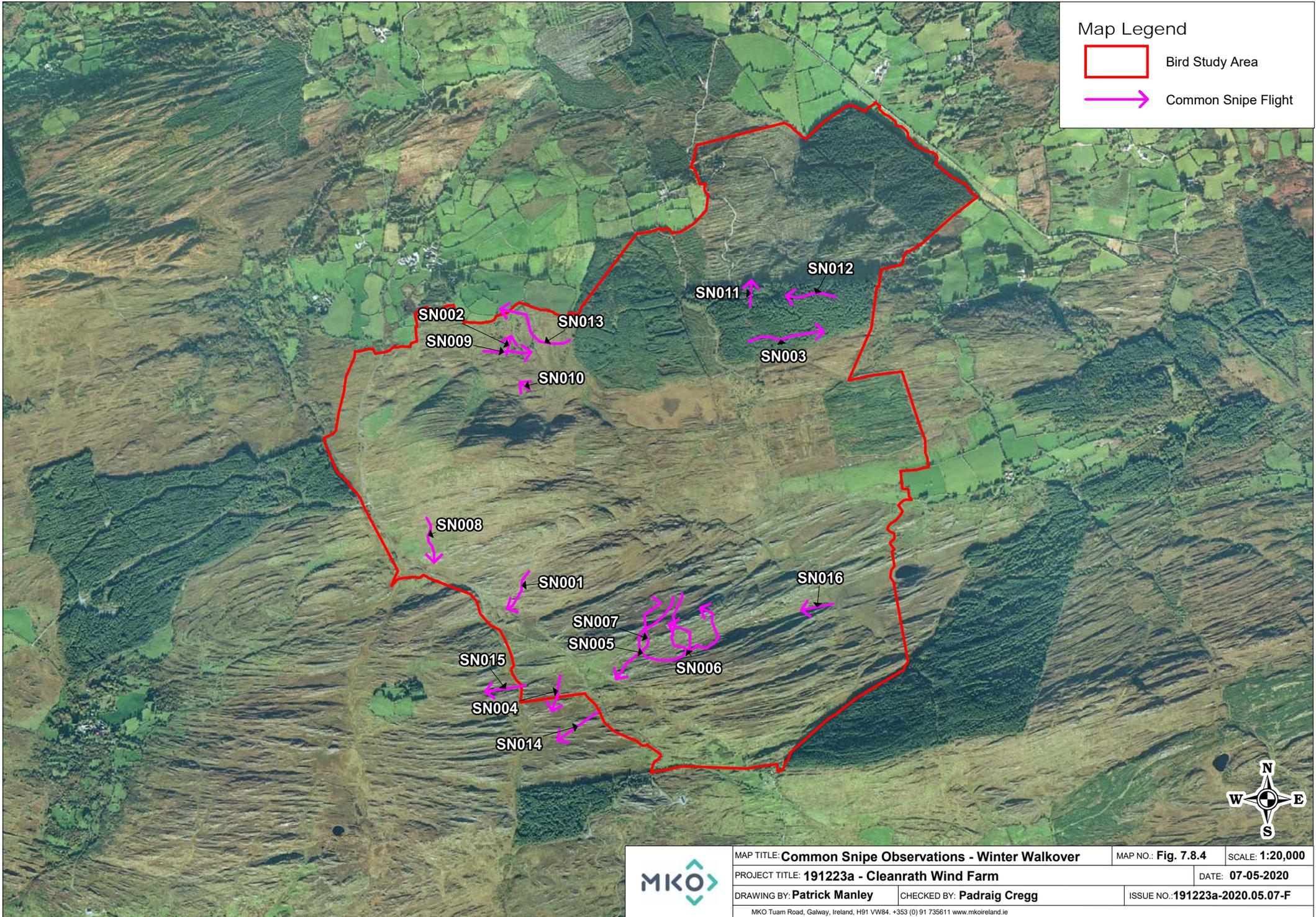
- Bird Study Area
- Turbine Layout
- 500m Buffer of Turbine Layout
- 2016 Probably Breeding Territory



	MAP TITLE: Common Snipe Breeding Territories - VP Surveys		MAP NO.: Fig. 7.1.8.1	SCALE: 1:20,000	
	PROJECT TITLE: 191223a - Cleanrath Wind Farm			DATE: 07-05-2020	
	DRAWING BY: Patrick Manley		CHECKED BY: Padraig Cregg	ISSUE NO.: 191223a-2020.05.07-F	
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie				



	MAP TITLE: Sparrowhawk Observations - Breeding Walkover	MAP NO.: Fig. 7.3.7	SCALE: 1:20,000
	PROJECT TITLE: 191223a - Cleanrath Wind Farm		DATE: 07-05-2020
	DRAWING BY: Patrick Manley	CHECKED BY: Padraig Cregg	ISSUE NO.: 191223a-2020.05.07-F
	<small>MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie</small>		



Map Legend

- Bird Study Area
- Common Snipe Flight

	MAP TITLE: Common Snipe Observations - Winter Walkover		MAP NO.: Fig. 7.8.4	SCALE: 1:20,000	
	PROJECT TITLE: 191223a - Cleanrath Wind Farm			DATE: 07-05-2020	
	DRAWING BY: Patrick Manley		CHECKED BY: Padraig Cregg	ISSUE NO.: 191223a-2020.05.07-F	
	<small>MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie</small>				

Table 13 Teal Survey Data

Breeding Bird Surveys							
Obs. Ref. No.	Survey Date	Time of observation	Species	Number of birds	Notes on Habitat and Activity	Comments	Surveyor
T001	15/04/2015	08:12	Teal	2	Pair disturbed, flew off Southeast over area of conifer plantation, only to be chased by earlier sighting of SH which was perched on conifer tree.		D

Wildfowl Surveys							
Date	Location	Species	Number of birds	Feeding/ Roosting	Notes on habitat and activity	Comments	Surveyor
09/12/2015	4	Teal	6		Six individuals travelling west along edge of lake and farmland low over lake before losing visual in reed bed.		D
15/12/2015	5	Teal	3		Three individuals seen flying low over lake heading North into reed bed system.		D
15/12/2015	5	Teal	3		Three individuals travelling east in middle of lake.		D
15/12/2015	5	Teal	6		Six individuals seen travelling west low over surface of the lake before doing a u-turn and came back travelling east.		D
04/01/2016	4	Teal	7		Seven individuals travelling west across surface of lake, before turning back east.		D
04/02/2016	4	Teal	4		Individuals travelling east across lake, flying low over surface of lake.		D
09/02/2016	4	Teal	2		Pair travelling low of surface of the lake heading west.		D
09/02/2016	4	Teal	8		Small group seen flying out of reedbed, heading southwest initially before turning west travelling over lake.		D
18/02/2016	5	Teal	6		Small travelling east low of over surface of the lake.		D
03/03/2016	4	Teal	4		Individuals seen feeding along edge of lake shore gradually moving North.		D
24/03/2016	4	Teal	2		Pair seen flying out of reedbed circling once before landing in same reed bed again.		D
28/03/2016	5	Teal	4		Individuals seen flying east across area of lake low over the surface.		D
31/08/2016		Teal	6		Pair flying North over area of lake.	Off	D
13/09/2016		Teal	3		Group travelling North low of surface of lake.	Off	D
15/10/2016		Teal	3		Group travelling south across area of lake.		D

Wildfowl Surveys							
Date	Location	Species	Number of birds	Feeding/ Roosting	Notes on habitat and activity	Comments	Surveyor
14/11/2016	Lough allua	Teal	4		Group seen feeding in area amongst reed bed.		D
28/11/2016	Lough allua	Teal	2		Pair flying north low over surface of lake.		D
14/12/2016	Lough allua	Teal	5		Small group Teal feeding amongst reed bed.		D
30/12/2016	Lough allua	Teal	2		Pair of teal flying North out of reed bed		D
09/01/2017	Lough allua	Teal	3		Teal travelling north across surface of lake.		D
26/01/2017	Lough allua	Teal	2		Teal feeding amongst reedbed.		D
26/01/2017	Lough allua	Teal	3		Teal travelling south across section of lake.		D
26/01/2017	Lough allua	Teal	3		Teal feeding amongst reedbed.		D
07/02/2017	Lough allua	Teal	3		Teal flying east across lake		D
07/02/2017	Lough allua	Teal	2		Teal feeding along edge of lake shore.		D
23/02/2017	Lough allua	Teal	4		Teal feeding amongst reedbed.		D

Map Legend

-  Bird Study Area
-  Teal Observation

T001



MAP TITLE: Teal Observation - Breeding Bird Surveys	MAP NO.: Fig. 7.3.8	SCALE: 1:20,000
PROJECT TITLE: 191223-a - Cleanrath Windfarm	DATE: 28-07-2020	
DRAWING BY: Patrick Manley	CHECKED BY: Padraig Cregg	ISSUE NO.: 190730-2020.07.28-F
<small>MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie</small>		