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1. **APPENDIX 7.4 (SURVEY DATA)**

Table 1 Whooper Swan Survey Data

Vantage Point Surveys													
Map Ref.	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
WS0030	09/10/2017	7	Whooper Swan	4	11:42:00	30	15	15			Flying	Flew from SE of the factory to pond 300m NW of VP	SONeill
WS0031	09/10/2017	7	Whooper Swan	4	12:31:00	55	30	25			Flying	Left the pond to the NW of VP. 1 landed back just SE of factory. 3 flew E along tracks.	SONeill
WS0032	07/11/2017	9	Whooper Swan	7	15:11:00	45	25	20			Flying	Landed on wetland	SON
WS0033	14/11/2017	5	Whooper Swan	119	16:02:00	180	90	90			Flying / landing	119 flew in from the S off site. Landed in ponds in the S end of east Drinagh.	SON
WS0034	14/11/2017	6	Whooper Swan	4	13:12:00	120	60	60			Flying	Flew off pond south end of east Drinagh, flew E turned back W. 2 landed in wetland S of tracks and 2 on pond N of tracks.	SON
WS0035	15/11/2017	7	Whooper Swan	6	13:15:00	90	45	45			Flying	No species of note	SON
WS0036	26/11/2017	1	Whooper Swan	6	08:35:00	60			60		Flying	Just east off site	BM
WS0037	09/12/2017	5	Whooper Swan	2	15:08:00	40	20	20			Flying	Flew in from the N landed in the pond in the NE of the site	SÓNeill

Vantage Point Surveys													
Map Ref.	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
WS0038	09/12/2017	10	Whooper Swan	23	15:46:00	90			90		Flying	Flew in from SW, continued towards wetland area	BM
WS0039	12/12/2017	5	Whooper Swan	217	11:40:00	120	60	60			Flying	Flew in off fields to the S of the site. Landed on pond W of tracks	SON
WS0040	12/12/2017	5	Whooper Swan	11	12:43:00	20	10	10			Flying	Flew off site to SW didn't see where they landed	SON
WS0041	12/12/2017	5	Whooper Swan	29	12:52:00	180	90	90			Flying	Flew off pond flew S landed in fields to the S of the site	SON
WS0042	12/12/2017	5	Whooper Swan	17	13:02:00	120	60	60			Flying	Flew off pond and flew SE. Landed in fields off site to the SE.	SON
WS0043	13/12/2017	5	Whooper Swan	227	08:38:00	720	360	360			Flying	Circled over the S end of site flew S towards field off site to the S.	SON
WS0044	13/12/2017	6	Whooper Swan	22	12:12:00	90			90		Flying	Flying S-N over East Drinagh flew off site.	SON
WS0045	13/12/2017	6	Whooper Swan	30	12:28:00	40			40		Flying	Flying from W-E over S end of the site.	SON
WS0046	13/12/2017	6	Whooper Swan	18	13:48:00	180	90	90			Flying	Flew out of fields S of the site flew into east Drinagh and landed in the wetland in the SE corner.	SON

Vantage Point Surveys													
Map Ref.	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
WS0047	14/12/2017	6	Whooper Swan	12	08:58:00	60		60			Flying	Flying from W-E over S of site	SON
WS0048	14/12/2017	6	Whooper Swan	5	09:00:00	60		60			Flying	Flying W-E over S of site. At 0902 17 WS seen circling the fields to the S of east Drinagh (same birds)	SON
WS0049	14/12/2017	6	Whooper Swan	11	09:52:00	120			120		Flying	Flying from fields S of east Drinagh into wet area SE of factory.	SON
WS0050	14/12/2017	6	Whooper Swan	6	10:10:00	180	90	90			Flying	Flew in from NW flying SE turned E flew along tracks landed in wetland in SE of Drinagh	SON
WS0051	14/12/2017	6	Whooper Swan	19	10:36:00	180	90	90			Flying	Flew in from E, S of tracks landed in wet area SE of factory	SON
WS0052	14/12/2017	6	Whooper Swan	2	10:40:00	60			60		Flying	Flying W from NE over NW corner of sight	SON
WS0053	14/12/2017	7	Whooper Swan	6	14:32:00	60	30	30			Flying/perched	Flew in from SW flying NE turned N landed On Pond To The West with other 2	SON
WS0054	10/01/2018	5	Whooper Swan	10	10:19:00	120		20	100		Flying	Ice on 70% of the ponds	SON
WS0055	12/01/2018	8	Whooper Swan	26	08:35:00	60	30	30			Flying	In from NE and landed on wetland	BM

Vantage Point Surveys													
Map Ref.	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
WS0056	22/01/2018	4	Whooper Swan	12	08:55:00	90			90		Flying	Flew NW (towards Drinagh ?)	BM
WS0057	23/01/2018	10	Whooper Swan	12	10:43:00	90			90		Flying	Flew in SW direction, gaining height	SON
WS0058	01/02/2018	5	Whooper Swan	4	08:04:00	20	10	10			Flying	Flew S into pond W/NW of VP. More can still be heard to the NW	SON
WS0059	01/02/2018	5	Whooper Swan	2	08:13:00	40	20	20			Flying	Left the pond to the W flew N/NE looked to land E of factory N of tracks.	SON
WS0060	01/02/2018	5	Whooper Swan	7	08:19:00	30	15	15			Flying	Flying E along tracks	SON
WS0061	01/02/2018	5	Whooper Swan	3	09:36:00	40	20	20			Flying	Flying in from the E flying W. Looked to have landed E of factory North of tracks	SON
WS0062	26/02/2018	10	Whooper Swan	9	18:01:00	90			90		Flying	Flew northwards	BM
WS0001	10/10/2018	5	Whooper Swan	1	15:50:00	15	15				PB4, (Cutover bog) travelling, landing on water		TR
WS0003	16/10/2018	8	Whooper Swan	3	18:00:00	20	20				PB4, (Cutover bog) travelling, going in to land		TR
WS0002	16/10/2018	8	Whooper Swan	4	17:43:00	45	45				PB4, (Cutover bog) travelling		TR

Vantage Point Surveys													
Map Ref.	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
WS0005	07/11/2018	5	Whooper Swan	2	10:45:00	60	60				GA1, (Improved agricultural grassland) PB4, (Cutover bog) travelling, landing on water		TR
WS0004	07/11/2018	5	Whooper Swan	5	10:00:00	30	30				PB4, (Cutover bog) travelling before perching on water		TR
WS0006	15/11/2018	9	Whooper Swan	4	08:40:00	15	15				PB4, (Cutover bog) travelling, appearing to land		TR
WS0020	16/11/2018	2	Whooper Swan	5	08:01:00	154			154		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling		JH
WS0021	16/11/2018	2	Whooper Swan	3	10:36:00	210			210		PB4, (Cutover bog) WD4, (Conifer plantation) Travelling		JH
WS0007	16/11/2018	10	Whooper Swan	6	08:25:00	130		130			PB4, (Cutover bog) travelling		TR
WS0008	16/11/2018	10	Whooper Swan	2	08:55:00	100		100			PB4, (Cutover bog) travelling		TR
WS0009	20/11/2018	6	Whooper Swan	3	08:00:00	220	70	150	20		PB4, (Cutover bog) travelling		TR
WS0011	20/11/2018	6	Whooper Swan	2	08:45:00	90		90			PB4, (Cutover bog) travelling		TR
WS0012	20/11/2018	6	Whooper Swan	1	09:20:00	250	250				PB4, (Cutover bog) travelling		TR

Vantage Point Surveys													
Map Ref.	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
WS0010	20/11/2018	6	Whooper Swan	8	08:30:00	60	60				PB4, (Cutover bog)		TR
WS0013	20/11/2018	6	Whooper Swan	2	11:10:00	205	205				PB4, (Cutover bog)		TR
WS0022	30/11/2018	4	Whooper Swan	8	09:44:00	215		215			PB4, (Cutover bog) WD4, (Conifer plantation) Travelling		JH
WS0016	30/11/2018	8	Whooper Swan	3	08:03:00	210	210				PB4, (Cutover bog) travelling, rising from wetland		TR
WS0014	30/11/2018	8	Whooper Swan	3	07:45:00	45	45				PB4, (Cutover bog) travelling		TR
WS0017	30/11/2018	8	Whooper Swan	8	08:30:00	390		150	240		PB4, (Cutover bog) travelling		TR
WS0015	30/11/2018	8	Whooper Swan	7	07:46:00	40	40				PB4, (Cutover bog) rising from wetland		TR
WS0018	30/11/2018	8	Whooper Swan	6	09:25:00	30	30				PB4, (Cutover bog) rising and landing on wetland		TR
WS0019	30/11/2018	8	Whooper Swan	2	11:35:00	30	30				PB4, (Cutover bog)		TR
WS0023	04/12/2018	5	Whooper Swan	5	08:16:00	56		56			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling		JH
WS0024	04/12/2018	5	Whooper Swan	4	11:54:00	35	35				PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Landing on Flooded area of PB4		JH
WS0026	11/12/2018	3	Whooper Swan	6	08:00:00	45		45			PB4, (Cutover bog) travelling		TR

Vantage Point Surveys													
Map Ref.	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
WS0025	11/12/2018	8	Whooper Swan	4	08:35:00	45	45				PB4, (Cutover bog) Landing on wet area of PB4		JH
WS0027	12/12/2018	4	Whooper Swan	5	12:55:00	180	180				PB4, (Cutover bog) feeding before rising from bog		TR
WS0028	19/12/2018	10	Whooper Swan	5	08:15:00	45	45				PB4, (Cutover bog) travelling, landing on bog		TR
WS0029	19/12/2018	10	Whooper Swan	5	08:30:00	25	25				PB4, (Cutover bog) travelling, landing		TR

Vantage Point Non-Flight Observations						
Date	VP	Species	No. of Birds	Time	Comments	Surveyor
23/10/2017	5	Whooper Swan	3	11:31:00	On pond W of tracks in N end.	SON
13/11/2017	6	Whooper Swan	4	15:20:00	Feeding on pond in east Drinagh.	SON
13/11/2017	6	Whooper Swan		17:13:00	Calling from the SE in south end of east Drinagh. Disturbed at 1738 by 2 trains. Started to call again. Were quietening down at this stage. Still calling at 1800 when watch finished	SON
14/11/2017	5	Whooper Swan	2	15:30:00	The 2 that were recorded earlier from VP2 can be seen on pond N of track that runs e-w. 3WS recorded on this pond.	SON
15/11/2017	5	Whooper Swan		07:04:00	Calling from same spot as they were in on the 14/11. (Cannot see them as fog on ponds). 0730 still calling from on site. 0805 can still be heard. 0809 calling got louder and stopped may have left the site.	SON

Vantage Point Non-Flight Observations						
Date	VP	Species	No. of Birds	Time	Comments	Surveyor
09/12/2017	5	Whooper Swan	8	13:06:00	On pond W of tracks. About half way up the pond	SÓNeill
13/12/2017	5	Whooper Swan	163	08:34:00	On ponds across east Drinagh	SON
13/12/2017	5	Whooper Swan		07:45:00	On pond can't make out how many yet.	SON
13/12/2017	5	Whooper Swan	61	08:15:00	On ponds across east Drinagh.	SON
08/01/2018	7	Whooper Swan		09:48:00	Heard calling off site to the E.	SON
16/01/2018	9	Whooper Swan		16:10:00	Heard off site to east probably a fair distance away	BM
01/02/2018	5	Whooper Swan		07:32:00	Heard calling to the NW. E of factory.	SON
10/10/2018	5	Whooper Swan	2	15:30:00	PB4, (Cutover bog) on water	TR

Winter Transect/Waterfowl Surveys								
Map Ref.	Date	Time of Obsv.	Species	No. of birds	Feeding/Roosting	Habitat	Activity	Surveyor
WS001	05/10/2018		Whooper Swan	4			On FW. First of the WS back on site	JH
WS002	22/10/2018	10:23:00	Whooper Swan	7			travelling in height band 2 for 56 seconds. PB4 On site.	JH
WS003	22/10/2018	10:26:00	Whooper Swan	6			travelling in height band 2 for 40 seconds. PB4, WD4. Onsite	JH
WS004	30/10/2018		Whooper Swan	3				JH
WS005	30/10/2018		Whooper Swan	2				JH
WS006	30/10/2018		Whooper Swan	4				JH
WS007	05/11/2018		Whooper Swan	3				JH
WS008	05/11/2018		Whooper Swan	24				JH

Winter Transect/Waterfowl Surveys								
Map Ref.	Date	Time of Obsv.	Species	No. of birds	Feeding/Roosting	Habitat	Activity	Surveyor
WS009	05/11/2018		Whooper Swan	4				JH
WS010	05/11/2018		Whooper Swan	7				JH
WS011	05/11/2018		Whooper Swan	2				JH
WS012	05/11/2018		Whooper Swan	3				JH
WS013	08/11/2018	12:19:00	Whooper Swan	12		PB4, (Cutover bog)	Flushed by observer from flooded area	JH
WS014	12/11/2018	11:55:00	Whooper Swan	3	Roosting	PB4, (Cutover bog)	Roosting on flooded area.	JH
WS015	19/11/2018	09:39:00	Whooper Swan	2	Roosting	PB4, (Cutover bog)	Roosting on cutover bog.	JH
WS016	19/11/2018	15:24:00	Whooper Swan	2		GA1, (Improved agricultural grassland) PB4, (Cutover bog)	Travelling over improved grassland and cutover bog.	JH
WS017	21/11/2018	10:12:00	Whooper Swan	3			Flying overhead	JH
WS018	27/11/2018	10:44:00	Whooper Swan	2	Roosting	PB4, (Cutover bog)	Roosting on flooded area.	JH
WS019	03/12/2018	09:35:00	Whooper Swan	4	Roosting	PB4, (Cutover bog)	Roosting on flooded area.	JH
WS020	03/12/2018	09:56:00	Whooper Swan	2	Roosting	PB4, (Cutover bog)	Roosting on flooded area.	JH
WS021	03/12/2018	10:00:00	Whooper Swan	2	Roosting	PB4, (Cutover bog)	Roosting on flooded area.	JH
WS022	03/12/2018	10:01:00	Whooper Swan	3			Flying overhead	JH
WS023	03/12/2018	10:08:00	Whooper Swan	3	Roosting	PB4, (Cutover bog)	Roosting on flooded area.	JH
WS024	03/12/2018	10:12:00	Whooper Swan	8	Roosting	PB4, (Cutover bog)	Roosting on flooded area.	JH
WS025	03/12/2018	10:18:00	Whooper Swan	6	Roosting	PB4, (Cutover bog)	Disturbed by observer. Flying for short time before landing back to roost	JH
WS026	03/12/2018	10:22:00	Whooper Swan	1	Roosting	PB4, (Cutover bog)	Roosting on flooded area.	JH
WS027	05/12/2018	09:28:00	Whooper Swan	5	Roosting	PB4, (Cutover bog)	Roosting on flooded area.	JH
WS028	05/12/2018	10:34:00	Whooper Swan	1	Roosting	PB4, (Cutover bog)	Roosting on flooded area.	JH
WS029	02/01/2019		Whooper Swan	2				JH

Winter Transect/Waterfowl Surveys								
Map Ref.	Date	Time of Obsv.	Species	No. of birds	Feeding/Roosting	Habitat	Activity	Surveyor
WS030	02/01/2019		Whooper Swan	2			Noggus Bog	JH
WS031	09/01/2019	10:24:00	Whooper Swan	5			Calling and flying overhead	JH
WS032	09/01/2019	11:01:00	Whooper Swan	5	Roosting	PB4, (Cutover bog)	Roosting on flooded area.	JH
WS033	15/01/2019	11:24:00	Whooper Swan	4	Roosting	PB4, (Cutover bog)	Disturbed by observer. Flew SW before turning and landing back to roost on bog	JH
WS034	15/01/2019	11:40:00	Whooper Swan	6	Roosting	PB4, (Cutover bog)	Roosting on flooded area.	JH
WS035	28/01/2019		Whooper Swan	5				JH
WS036	28/01/2019		Whooper Swan	6				JH
WS037	28/01/2019		Whooper Swan	4				JH
WS038	01/02/2019		Whooper Swan	14				JH
WS039	01/02/2019		Whooper Swan	4			2 Adults & 2 Juveniles	JH
WS040	01/02/2019		Whooper Swan	5			Noggus Bog	JH
WS041	08/02/2019	10:04:00	Whooper Swan	7	Roosting & Foraging	PB4, (Cutover bog)	Roosting and foraging on flooded area of cutover bog	JH
WS042	25/02/2019	09:50:00	Whooper Swan	6	Roosting	PB4, (Cutover bog)	Roosting on flooded area.	JH
WS043	25/02/2019	09:50:00	Whooper Swan	3	Roosting	PB4, (Cutover bog)	Roosting on flooded area.	JH
WS044	25/02/2019		Whooper Swan	3			Noggus Bog	JH
WS045	25/02/2019		Whooper Swan	8			Noggus Bog	JH
WS046	25/02/2019		Whooper Swan	16				JH
WS047	04/03/2019		Whooper Swan	6			Noggus Bog	JH
WS048	04/03/2019		Whooper Swan	5			Noggus Bog	JH
WS049	04/03/2019		Whooper Swan	10				JH
WS050	05/03/2019	11:20:00	Whooper Swan	12	Roosting & Foraging	PB4, (Cutover bog)	Roosting and foraging on flooded area of cutover bog	JH

Winter Transect/Waterfowl Surveys								
Map Ref.	Date	Time of Obsv.	Species	No. of birds	Feeding/Roosting	Habitat	Activity	Surveyor
WS051	28/03/2019		Whooper Swan	3				JH
WS052	28/03/2019		Whooper Swan	8			Noggus Bog	JH
WS053	24/09/2019	11:42:26	Whooper Swan	1	Roosting	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes)	On flooded area	JH

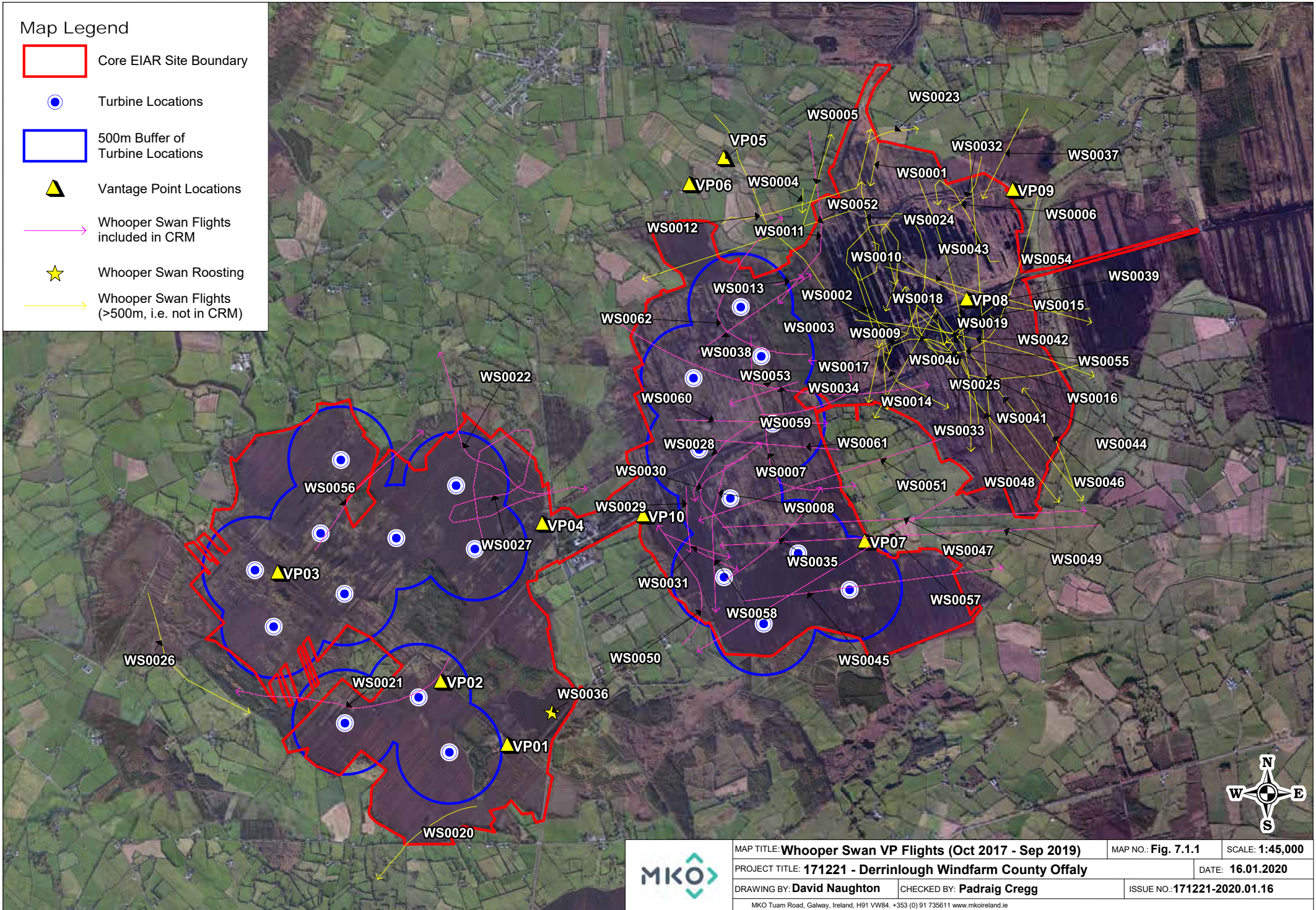
Migratory Bird Surveys												
Map Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-180m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
WS01	25/10/2018	CMVP4	Whooper Swan	4	10:04:00	72			72		GA1, (Improved agricultural grassland) FW2, (Depositing/upland rivers) Travelling	JH
WS02	26/11/2018	CMVP4	Whooper Swan	4	17:07:00	38		38			FW2, (Depositing/upland rivers) GA1, (Improved agricultural grassland) Travelling	JH
WS03	17/12/2018	CMVP2	Whooper Swan	10	16:40:00	40					FW, (Watercourses) Travelling low over river/wetland	TR
WS04	07/01/2019	CMVP3	Whooper Swan	4	17:15:00	25					Roosting	TR
WS05	07/01/2019	CMVP3	Whooper Swan	2	17:20:00	40		40			GA1, (Improved agricultural grassland) Travelling	TR
WS06	07/01/2019	CMVP3	Whooper Swan	2	17:20:00	45					Travelling	TR
WS07	21/01/2019	CMVP1	Whooper Swan	8	09:38:00	63			63		GA1, (Improved agricultural grassland) Travelling	JH
WS08	19/03/2019	CMVP1	Whooper Swan	7	07:54:00	98	0	0	98	0	PB1, (Raised bog) GA1, (Improved agricultural grassland) Travelling	JH

Migratory Bird Surveys												
Map 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 (25-180m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
WS09	21/03/2019	CMVP3	Whooper Swan	29	08:27:00	96	0	0	96	0	FW2, (Depositing/upland rivers) GA1, (Improved agricultural grassland) Travelling	JH
WS10	21/03/2019	CMVP3	Whooper Swan	7	08:30:00	46	0	0	46	0	GA1, (Improved agricultural grassland) Travelling	JH
WS11	22/03/2019	CMVP2	Whooper Swan	8	07:18:00	38	0	38	0	0	FW2, (Depositing/upland rivers) GA1, (Improved agricultural grassland) Travelling	JH

Incidental Observations						
Date	Survey Type	Location	Species	No. of Birds	Notes	Surveyor
26/10/2018	Hen Harrier Roost Survey	HHVP 6	Whooper Swan	8	Travelling towards site	TR
21/03/2019	Hen Harrier Roost Survey	HHVP3 Derrybrat	Whooper Swan	8	17:02 PM Roosting on wet area of PB4	JH

Map Legend

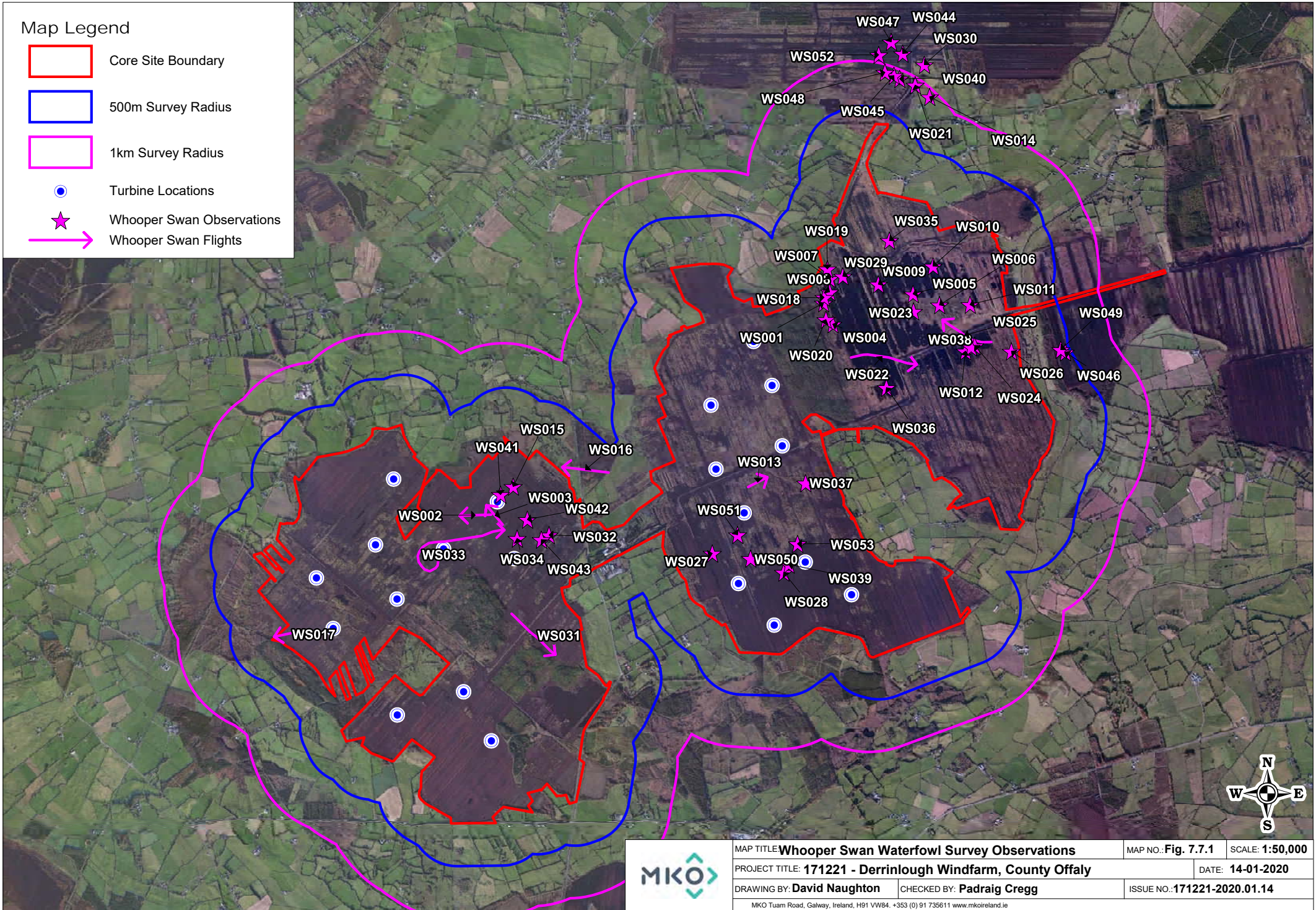
- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ Vantage Point Locations
- Whooper Swan Flights included in CRM
- ★ Whooper Swan Roosting
- Whooper Swan Flights (>500m, i.e. not in CRM)



	MAP TITLE: Whooper Swan VP Flights (Oct 2017 - Sep 2019)	MAP NO.: Fig. 7.1.1	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Windfarm County Offaly		DATE: 16.01.2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16	
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Map Legend

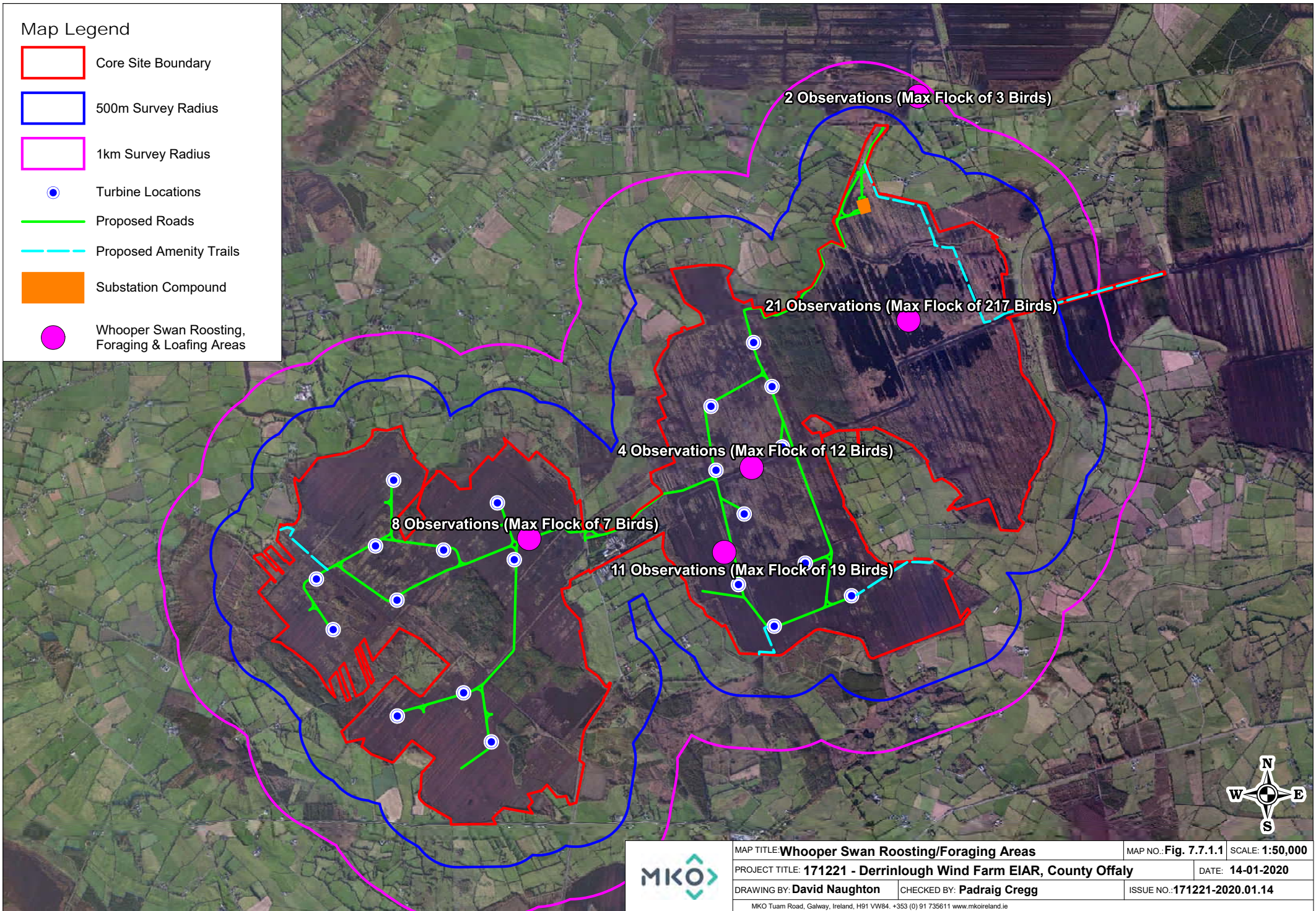
- Core Site Boundary
- 500m Survey Radius
- 1km Survey Radius
- Turbine Locations
- ★ Whooper Swan Observations
- ➔ Whooper Swan Flights



	MAP TITLE: Whooper Swan Waterfowl Survey Observations		MAP NO.: Fig. 7.7.1	SCALE: 1:50,000
	PROJECT TITLE: 171221 - Derrinlough Windfarm, County Offaly			DATE: 14-01-2020
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg	
	ISSUE NO.: 171221-2020.01.14			
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Map Legend

- Core Site Boundary
- 500m Survey Radius
- 1km Survey Radius
- Turbine Locations
- Proposed Roads
- Proposed Amenity Trails
- Substation Compound
- Whooper Swan Roosting, Foraging & Loafing Areas



	MAP TITLE: Whooper Swan Roosting/Foraging Areas	MAP NO.: Fig. 7.7.1.1	SCALE: 1:50,000
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly	DATE: 14-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.14
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Map Legend

- Core EIAR Site Boundary
- Turbine Locations
- ▲ Migratory VP Locations
- Whooper Swan CMVP Observations

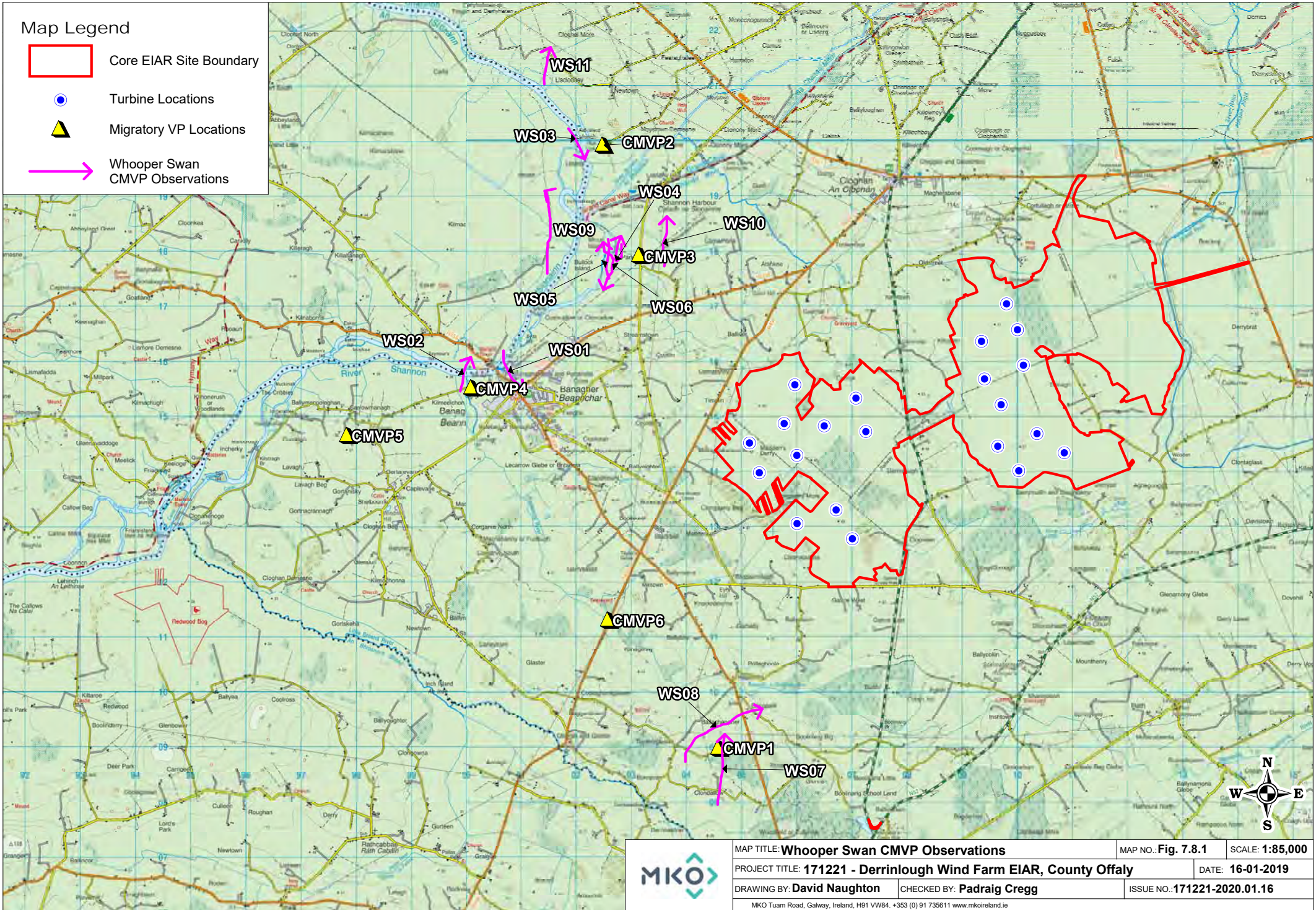


Table 2 Golden Plover Survey Data

Vantage Point Surveys													
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Comments	Surveyor
GP0022	10/10/2017	5	Golden Plover	71	09:58:00	900			900		Circling	Circling over E Drinagh	SON
GP0023	10/10/2017	6	Golden Plover	90	08:30:00	10800			10800		Circling	Flew in from east Drinagh circled open bog to the S of VP. Flew W didn't see where other 90 went	SON
GP0024	10/10/2017	6	Golden Plover	59	08:48:00	480			480		Circling		SON
GP0025	13/10/2017	3	Golden Plover	160	12:12:00	90			90		Flying	Flock north high over site	JA
GP0026	20/10/2017	10	Golden Plover	60	15:13:00	90			90		Flying	Loose flock flying south	BM
GP0027	23/10/2017	5	Golden Plover	10	12:30:00	120			120		Flying	Flew from east Drinagh W	SON
GP0028	23/10/2017	7	Golden Plover	19	15:18:00	180			180		Circling	Circling off to the N just S of VP2.	SON
GP0030	13/11/2017	3	Golden Plover	20	10:01:00	60			60		Flying	Flew north	BM
GP0031	13/11/2017	6	Golden Plover	28	16:13:00	90			90		Flying	Flew over site flying from NW-SE.	SON
GP0032	22/11/2017	10	Golden Plover	30	17:05:00	60			60		Flying	9 mistle thrushes flew east over VP	BM
GP0034	12/02/2018	9	Golden Plover	120	09:01:00	120			120		Flying	No species of note (party of 5 ravens passed)	SON
GP0035	12/03/2018	1	Golden Plover	200	09:19:00	180				180	Flying	Tight flock flying east	BM
GP0001	26/04/2018	10	Golden Plover	20	09:18:00	38		28			PB4, (Cutover bog) travelling		JH

Vantage Point Surveys													
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Comments	Surveyor
GP0002	26/04/2018	10	Golden Plover	20	09:23:00	170	10	20	120	20	PB4, (Cutover bog) landing on PB4		JH
GP0003	09/10/2018	2	Golden Plover	220	13:21:00	315	40	70	205	0	PB4, (Cutover bog) Flying and Landing on PB4	Roosting Flock Disturbed by BNM Machinery Workers	JH
GP0004	09/10/2018	2	Golden Plover	140	17:12:00	384	30	60	294	0	PB4, (Cutover bog) Flying and Landing on PB4		JH
GP0005	12/10/2018	7	Golden Plover	3	14:35:00	45			45		PB4, (Cutover bog) travelling		TR
GP0006	12/10/2018	7	Golden Plover	41	16:00:00	200			200		PB4, (Cutover bog) travelling		TR
GP0008	12/10/2018	7	Golden Plover	75	18:50:00	130	10	20	100		PB4, (Cutover bog) rising from bog, travelling		TR
GP0007	12/10/2018	7	Golden Plover	75	17:10:00	750	30	120	500	100	PB4, (Cutover bog) circling before landing on bog		TR
GP0009	16/10/2018	3	Golden Plover	40	13:36:00	24	10	14	0	0	PB4, (Cutover bog) Landing on PB4		JH
GP0010	16/10/2018	8	Golden Plover	170	15:30:00	1680		180	500	1000	PB4, (Cutover bog) circling area		TR
GP0014	07/11/2018	5	Golden Plover	200	10:25:00	230	10	20	200		PB4, (Cutover bog) travelling, landing above water		TR
GP0011	07/11/2018	5	Golden Plover	50	09:30:00	105			105		PB4, (Cutover bog) travelling		TR
GP0012	07/11/2018	5	Golden Plover	60	10:10:00	280			280		PB4, (Cutover bog) travelling		TR

Vantage Point Surveys													
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Comments	Surveyor
GP0013	07/11/2018	5	Golden Plover	27	10:20:00	70			70		PB4, (Cutover bog) GA1, (Improved agricultural grassland) travelling		TR
GP0015	10/12/2018	7	Golden Plover	35	09:11:00	70	0	0	0	70	PB4, (Cutover bog) Travelling		JH
GP0016	08/03/2019	2	Golden Plover	40	12:32:00	280	100	120	60	0	PB4, (Cutover bog) Circling and landing on PB4		JH
GP0019	15/03/2019	3	Golden Plover	120	12:08:00	188	0	0	43	145	PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling		JH
GP0018	15/03/2019	3	Golden Plover	30	10:03:00	57	10	10	37	0	PB4, (Cutover bog) WD4, (Conifer plantation) Landing on PB4		JH
GP0017	15/03/2019	3	Golden Plover	90	08:04:00	309	20	30	100	159	PB4, (Cutover bog) WD4, (Conifer plantation) Circling and landing on PB4		JH
GP0020	08/04/2019	7	Golden Plover	65	16:13:12	25	0	25	0	0	PB4, (Cutover bog) travelling, landed on bog		TR
GP0021	29/04/2019	7	Golden Plover	65	16:30:40	40	0	10	0	0	PB4, (Cutover bog) circling area before landing on bog		TR

Vantage Point Non-Flight Observations							
Map Ref. No.	Date	VP	Species	No. of Birds	Time	Comments	Surveyor
GP0029	25/10/2017	4	Golden Plover	16	15:20:00	Roosting on bare peat	BM
N/A	09/01/2018	6	Golden Plover		07:51:00	Heard calling while in flight flying from NW-SE Off site.	SON
GP0033	15/01/2018	4	Golden Plover	30	08:16:00	Resting on bare peat	BM

Breeding Bird Surveys							
Map Ref. No.	Survey Date	Time of observation	Species	No. of birds	Habitat and Activity	Comments	Surveyor
GP001	10/04/2018		Golden Plover	110	PB4, (Cutover bog) Roosting on the cutaway bog	Disturbed by observer. Circling site.	JH
GP002	10/04/2018		Golden Plover	2	PB4, (Cutover bog) Travelling in a Southwest direction		JH
GP003	10/04/2018		Golden Plover	2	GA1, (Improved agricultural grassland) Travelling	Flying in a southerly direction	JH
GP004	16/04/2018		Golden Plover	3	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Travelling	Disturbed by bog train	JH
GP005	20/04/2018		Golden Plover	24	PB4, (Cutover bog) Roosting	Flushed by observer - Landing and roosting on PB4	JH
GP006	20/04/2018		Golden Plover	2	PB4, (Cutover bog) Roosting	Flushed by observer	JH
GP007	20/04/2018		Golden Plover	24	PB4, (Cutover bog) Landing on PB4	Landing after being flushed	JH
GP008	09/04/2019	10:34:16	Golden Plover	60	PB4, (Cutover bog) Travelling		JH

Winter Transect/Waterfowl Surveys							
Map Ref.	Date	Time	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
GP001	03/10/2018		Golden Plover	46		Travelling flock in height band 3 for 86 seconds	JH
GP002	05/10/2018		Golden Plover	10	Roosting	Roosting on PB4	JH
GP003	22/10/2018	09:42:00	Golden Plover	2		Travelling in height band 3 for 34 seconds. OB4 Onsite	JH
GP004	22/10/2018	11:29:00	Golden Plover	4		Flushed by observer	JH
GP005	22/10/2018	15:21:00	Golden Plover	2		Flushed from PB4 by observer	JH
GP006	09/01/2019	10:58:00	Golden Plover	2	Roosting	Disturbed by observer from roosting area on cutover bog	JH
GP007	13/03/2019	11:31:00	Golden Plover	1		Flushed by observer from cutover bog	JH
GP008	23/05/2019	12:25:55	Golden Plover	1	Foraging	Foraging around flooded area of cutover bog.	JH

Migratory Bird Surveys												
Map 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 (25-180m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
GP01	10/10/2018	CMVP3	Golden Plover	8	08:49:00	46				46	GA1, (Improved agricultural grassland) FW2, (Depositing/upland rivers) Travelling	JH
GP02	11/10/2018	CMVP4	Golden Plover	3	09:06:00	57			57		GA1, (Improved agricultural grassland) FW2, (Depositing/upland rivers) Travelling West	JH
GP03	11/10/2018	CMVP4	Golden Plover	19	09:21:00	34			34		GA1, (Improved agricultural grassland) FW2, (Depositing/upland rivers) Travelling SW	JH

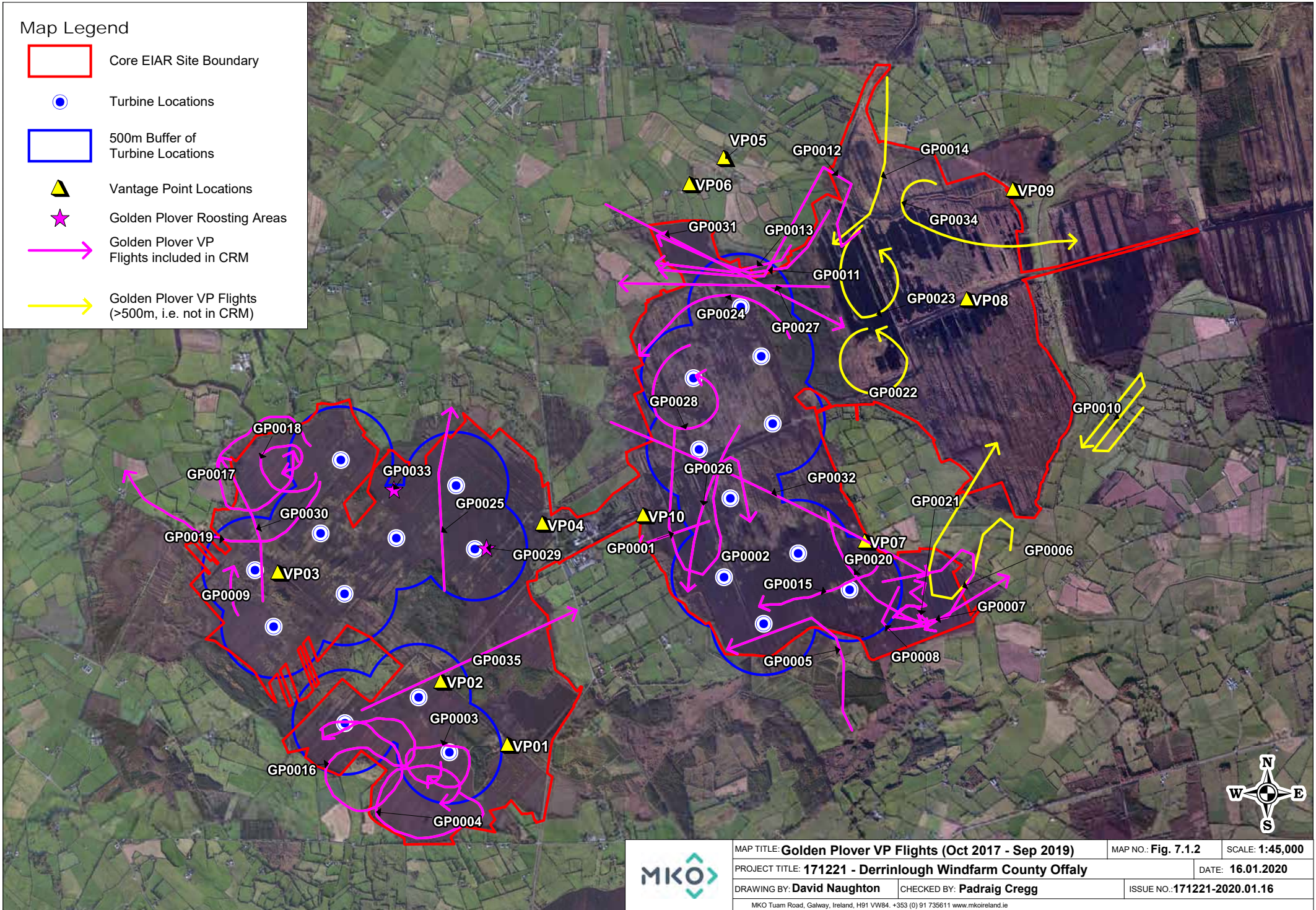
Migratory Bird Surveys												
Map Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-180m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
GP04	17/10/2018	CMVP5	Golden Plover	6	09:01:00	52		52			GA1, (Improved agricultural grassland) FW2, (Depositing/upland rivers) Travelling	JH
GP05	19/10/2018	CMVP2	Golden Plover	55	10:02:00	50			50		GA1, (Improved agricultural grassland) FW2, (Depositing/upland rivers) Travelling	JH
GP06	24/10/2018	CMVP3	Golden Plover	450	09:54:00	174				174	GA1, (Improved agricultural grassland) FW2, (Depositing/upland rivers) Travelling	JH
GP07	22/11/2018	CMVP3	Golden Plover	21	14:36:00	104	20	84			FW2, (Depositing/upland rivers) GA1, (Improved agricultural grassland) Travelling	JH
GP08	26/11/2018	CMVP4	Golden Plover	1500	14:54:00	282				282	FW2, (Depositing/upland rivers) GA1, (Improved agricultural grassland) Large Flocks of GP travelling up and down the Shannon.	JH
GP09	08/01/2019	CMVP2	Golden Plover	1000	16:15:00	200		50	100			TR
GP10	09/01/2019	CMVP4	Golden Plover	350	16:00:00	200			200			TR
GP11	21/01/2019	CMVP1	Golden Plover	80	10:14:00	136			136		GA1, (Improved agricultural grassland) WD4, (Conifer plantation) Travelling	JH
GP12	29/01/2019	CMVP6	Golden Plover	70	08:47:00	91				91	PB1, (Raised bog) WD4, (Conifer plantation) Travelling	JH
GP13	12/02/2019	CMVP6	Golden Plover	550	17:00:00	240					PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	TR
GP14	13/02/2019	CMVP5	Golden Plover	250	08:15:00	50			50		GA1, (Improved agricultural grassland) Travelling	TR

Migratory Bird Surveys												
Map 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 (25-180m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
GP15	13/02/2019	CMVP5	Golden Plover	200	08:25:00	50					GA1, (Improved agricultural grassland) Travelling	TR
GP16	13/02/2019	CMVP5	Golden Plover	70	08:30:00	50			50		GA1, (Improved agricultural grassland) Travelling	TR
GP17	13/02/2019	CMVP5	Golden Plover	350	08:55:00	60			60		GA1, (Improved agricultural grassland) Travelling And Circling	TR
GP18	13/02/2019	CMVP5	Golden Plover	2000	09:25:00	180			180		Circling Area In Large Numbers	TR
GP19	21/02/2019	CMVP2	Golden Plover	150	08:15:00	85				85	FW2, (Depositing/upland rivers) GA1, (Improved agricultural grassland) Travelling	JH
GP20	21/02/2019	CMVP2	Golden Plover	40	08:39:00	52			52		FW2, (Depositing/upland rivers) GA1, (Improved agricultural grassland) Travelling	JH
GP21	22/02/2019	CMVP3	Golden Plover	30	08:11:00	92				92	FW2, (Depositing/upland rivers) GA1, (Improved agricultural grassland) Travelling	JH
GP22	22/02/2019	CMVP3	Golden Plover	38	08:54:00	129			104	25	FW2, (Depositing/upland rivers) GA1, (Improved agricultural grassland) Travelling	JH

Incidental Observation						
Date	Survey Type	Location	Species	No. of Birds	Notes	Surveyor
10/12/2018	HH Roost Survey	HHVP6	Golden Plover			PM




Map Legend

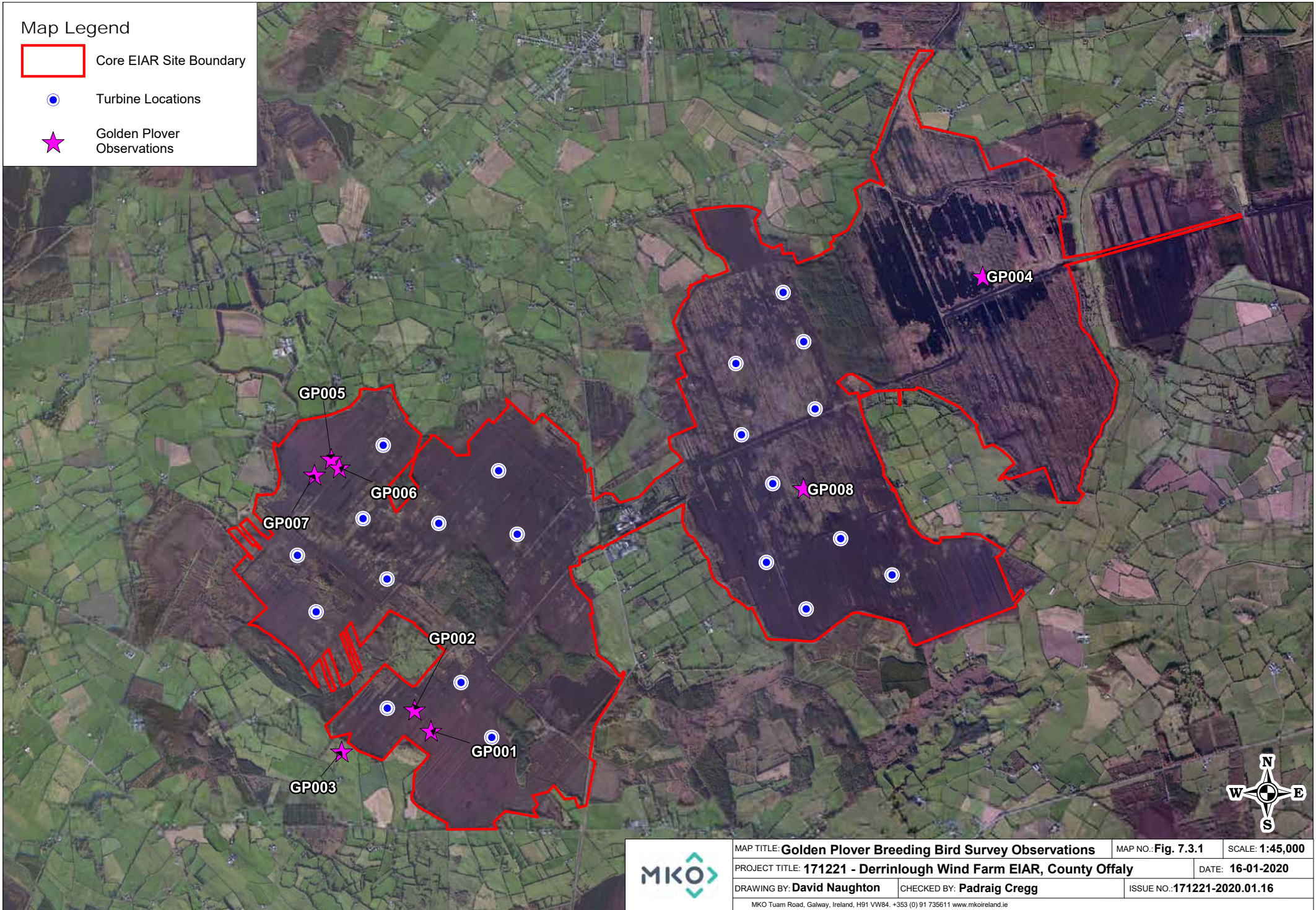
- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ Vantage Point Locations
- ★ Golden Plover Roosting Areas
- Golden Plover VP Flights included in CRM
- Golden Plover VP Flights (>500m, i.e. not in CRM)



	MAP TITLE: Golden Plover VP Flights (Oct 2017 - Sep 2019)	MAP NO.: Fig. 7.1.2	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Windfarm County Offaly		DATE: 16.01.2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16	
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Map Legend

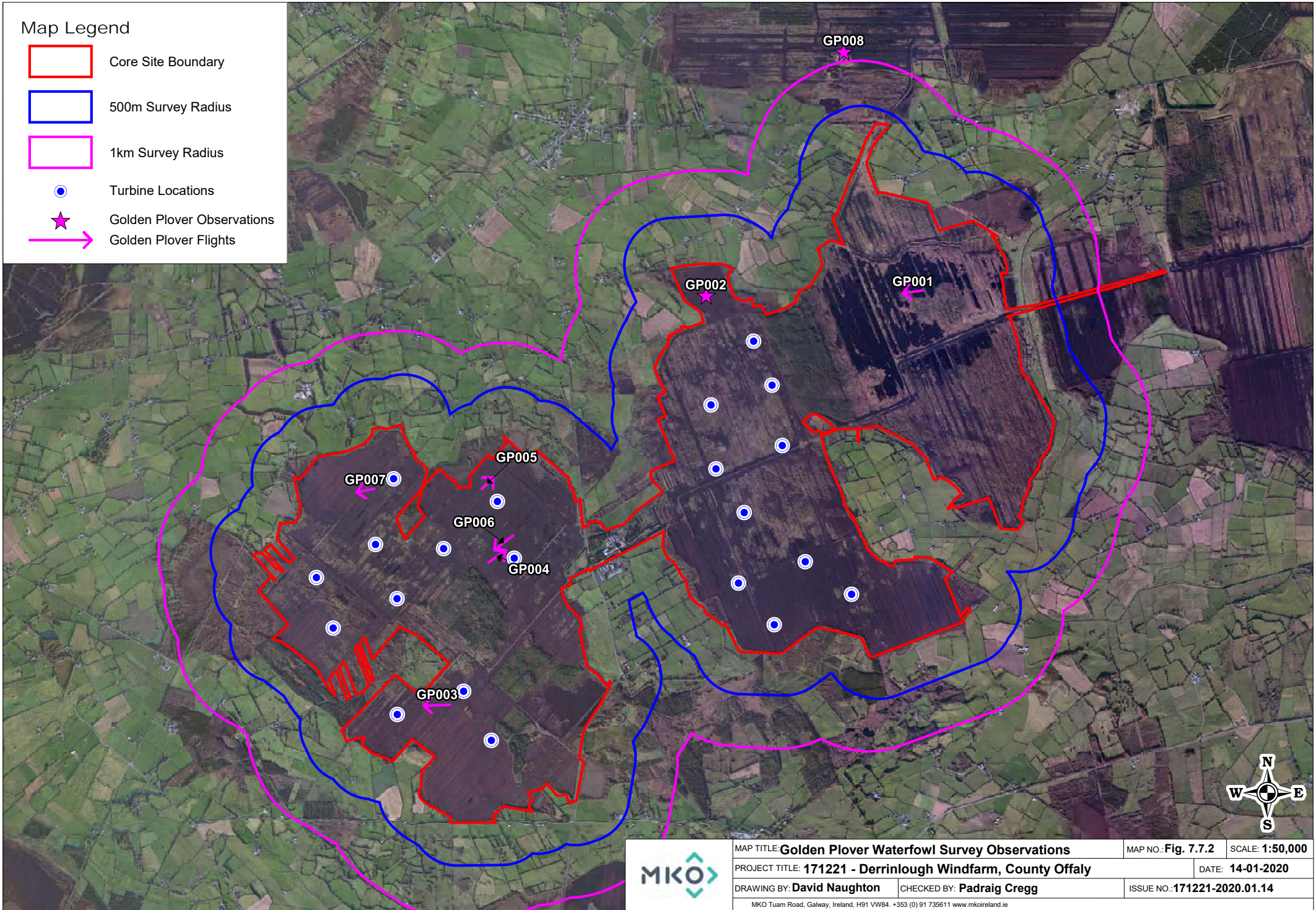
-  Core EIAR Site Boundary
-  Turbine Locations
-  Golden Plover Observations



	MAP TITLE: Golden Plover Breeding Bird Survey Observations	MAP NO.: Fig. 7.3.1	SCALE: 1:45,000
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly		DATE: 16-01-2020
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16
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Map Legend

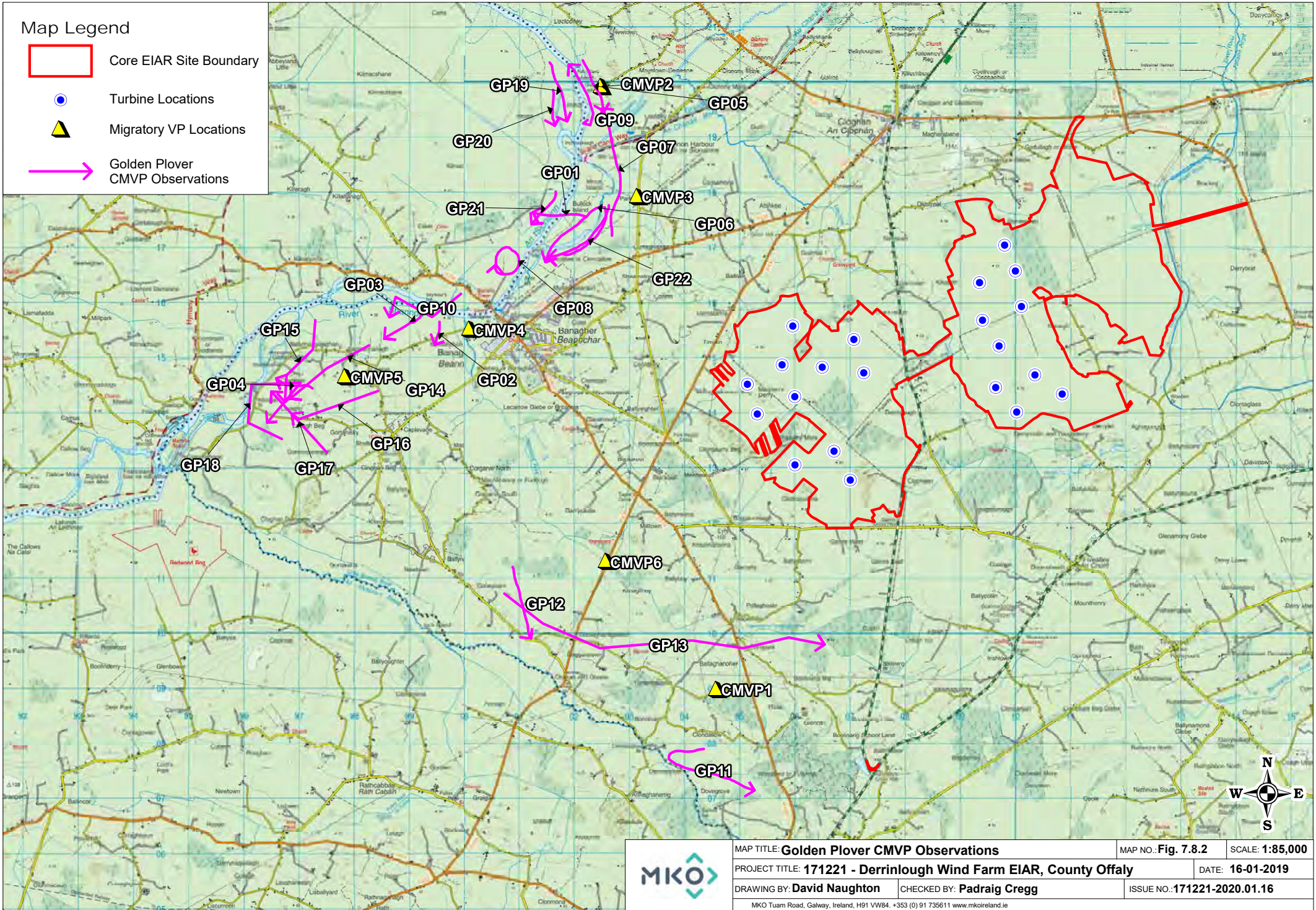
-  Core Site Boundary
-  500m Survey Radius
-  1km Survey Radius
-  Turbine Locations
-  Golden Plover Observations
-  Golden Plover Flights



	MAP TITLE: Golden Plover Waterfowl Survey Observations		MAP NO.: Fig. 7.7.2	SCALE: 1:50,000
	PROJECT TITLE: 171221 - Derrinlough Windfarm, County Offaly			DATE: 14-01-2020
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.14
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Map Legend

- Core EIAR Site Boundary
- Turbine Locations
- ▲ Migratory VP Locations
- Golden Plover CMVP Observations



	MAP TITLE: Golden Plover CMVP Observations	MAP NO.: Fig. 7.8.2	SCALE: 1:85,000	
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly		DATE: 16-01-2019	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16	
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Table 3 Hen Harrier Survey Data

Vantage Point Survey													
New Map Ref.	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
HH0017	09/10/2017	6	Hen Harrier	1	15:26:00	40	20	20			Hunting	Different male flying E-W in east Drinagh S of the tracks.	SON
HH0018	09/10/2017	6	Hen Harrier	1	15:05:00	40	20	20			Flying	Immature male flying W-E off site to the N of the site. Turned N along hedge row N of conifer plantation.	SON
HH0019	25/10/2017	3	Hen Harrier	1	12:08:00	30	15	15			Hunting	Over cut bog and scrub	BM
HH0020	05/02/2018	6	Hen Harrier	1	16:48:00	60	30	30			Flying	Female Flew N from conifer plantation. Flew NE of VP. Off site	SON
HH0021	26/02/2018	10	Hen Harrier	1	16:12:00	30	15	15			Hunting		BM
HH0002	05/05/2018	2	Hen Harrier	1	16:31:00	30	30				PB4, (Cutover bog) hunting	just after end of survey; height 1m	P.Troake
HH0001	05/05/2018	2	Hen Harrier	1	16:26:00	35	10	25			PB4, (Cutover bog)	Female height 15m → 5m	P.Troake
HH0003	13/07/2018	10	Hen Harrier	1	13:48:00	180	10	30	140		PB4, (Cutover bog) Hunting and flying on	Female	JH
HH0004	23/08/2018	10	Hen Harrier	1	15:16:00	237	182	55			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and gliding on wind	Female	JH
HH0005	16/10/2018	8	Hen Harrier	1	17:18:00	80	80				PB4, (Cutover bog) hunting and travelling	Female	TR

Vantage Point Survey													
New Map Ref.	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
HH0006	17/10/2018	9	Hen Harrier	1	15:30:00	120	120				PB4, (Cutover bog) hunting	Female	TR
HH0007	06/11/2018	1	Hen Harrier	1	10:37:00	96	96				PB4, (Cutover bog) FL1, (Dystrophic lakes) Hunting along edge of PB4 and FL1	Female	JH
HH0008	15/11/2018	9	Hen Harrier	1	09:40:00	30	30				PB4, (Cutover bog) hunting	Female	TR
HH0010	30/11/2018	8	Hen Harrier	1	11:15:00	180	180				PB4, (Cutover bog) travelling		TR
HH0009	30/11/2018	8	Hen Harrier	1	09:35:00	60	60				PB4, (Cutover bog) flying low over suitable roosting habitat	Female	TR
HH0012	11/12/2018	8	Hen Harrier	1	13:53:00	295	295				PB4, (Cutover bog) Female HH Hunting over Reedbeds in Wet Area of PB4 - and along Birch Scrub.	Female	JH
HH0011	11/12/2018	8	Hen Harrier	1	12:54:00	232	232				PB4, (Cutover bog) Female HH Hunting over Reedbeds in Wet Area of PB4	Female	JH
HH0013	08/03/2019	4	Hen Harrier	1	08:43:00	124	124				PB4, (Cutover bog) Female HH Hunting over PB4 and Scrub.	Female	JH

Vantage Point Survey													
New Map Ref.	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
HH0014	02/08/2019	5	Hen Harrier	1	11:02:17	190		150	40		PB4, (Cutover bog) Hunting along wetland and disappearing into cover. Female	Female	JH
HH0016	08/08/2019	9	Hen Harrier	1	20:20:17	140		140			PB4, (Cutover bog) Female. Travelling	Female	JH
HH0015	08/08/2019	9	Hen Harrier	1	18:00:42	52		52			PB4, (Cutover bog) Female HH. Flying west from VP9. Disappearing into scrub.	Female	JH

Breeding Bird Survey								
Map Ref. No.	Survey Date	Time of observation	Species	No. of birds	Habitat and Activity		Comments	Surveyor
HH001	14/06/2019	08:02:33	Hen Harrier	1	PB4, (Cutover bog)	Hunting and flying west	Adult Male	JH

Hen Harrier Roost Survey									
Map Ref No.	Date	HHVP	Species	No. of Birds	Time of flight	Duration of flight (s)	Notes on habitat and activity		Surveyor
HH01	05/12/2018	3	Hen Harrier	1	16:11:00		PB1, (Raised bog)	Going to roost	PM
HH02	05/12/2018	3	Hen Harrier	1	16:18:00		PB4, (Cutover bog)	Disturbed from roost	PM
HH03	18/12/2018	4	Hen Harrier	1	17:19:00		PB1, (Raised bog)	Travelling	PM

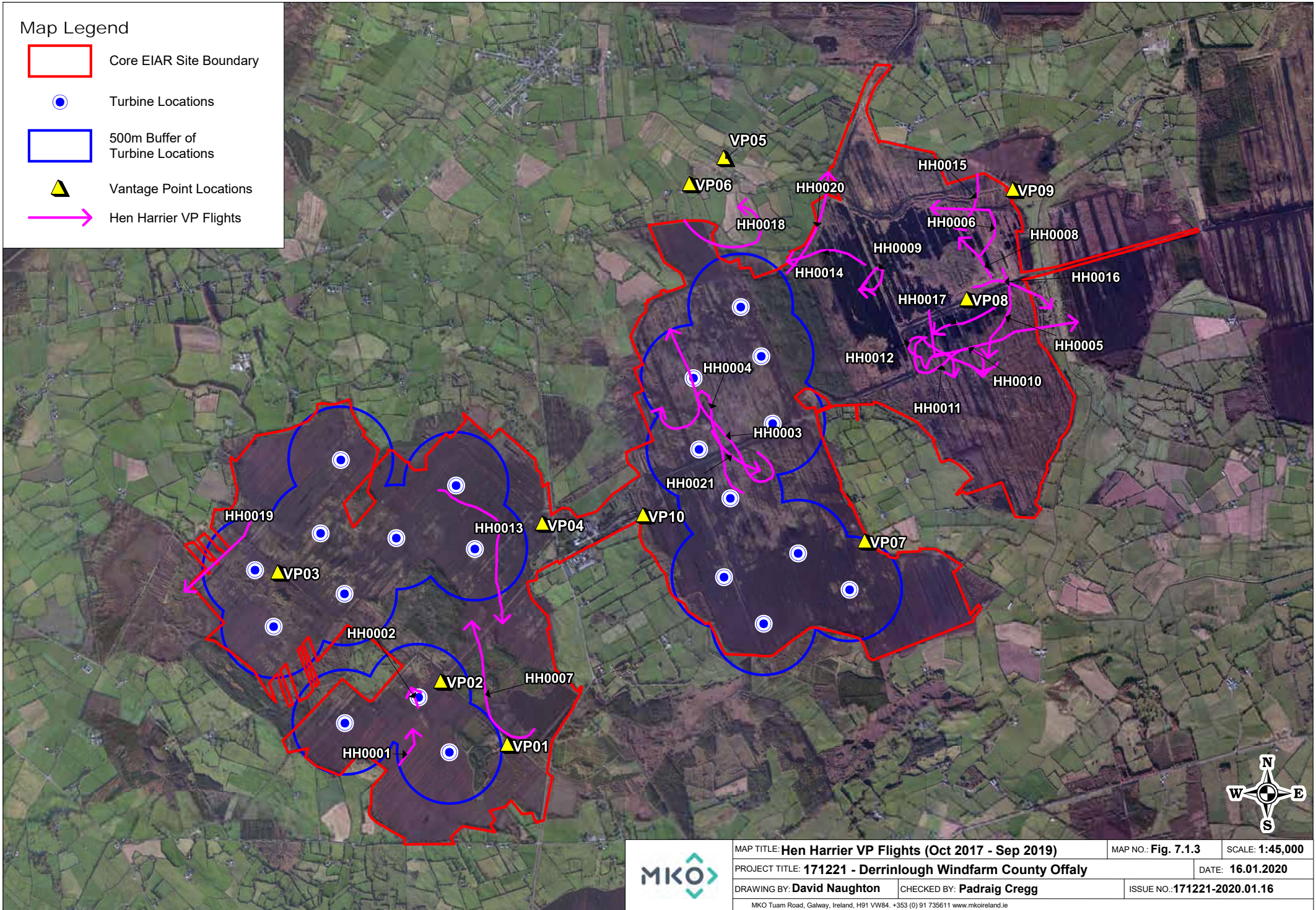
Hen Harrier Roost Survey								
Map Ref No.	Date	HHVP	Species	No. of Birds	Time of flight	Duration of flight (s)	Notes on habitat and activity	Surveyor
HH04	20/02/2019	3	Hen Harrier	1	16:34:00	192	PB4, (Cutover bog) WD4, (Conifer plantation) Female HH hunting over wet area of PB4 in height band 1 - Flying into heavy cover	JH
HH05	20/02/2019	3	Hen Harrier	1	16:58:00	80	PB4, (Cutover bog) WD4, (Conifer plantation) Female HH Hunting and Flying on - in Height Band 1 for 30 Seconds and Height Band 2 for 50 Seconds	JH
HH06	20/02/2019	3	Hen Harrier	1	17:56:00	24	WD4, (Conifer plantation) PB4, (Cutover bog) Female HH Flying along edge of WD4 - seemed to be disturbed by passing trains - turned and flew in opposite direction. In Height Band 1 for 24 Seconds	JH

Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time	Species	No. of birds	Habitat	Comments	Surveyor
HH001	14/11/2018	09:03:00	Hen Harrier	1	PB4, (Cutover bog)	Female hunting over bog and flying east	JH
HH002	19/11/2018	14:55:00	Hen Harrier	1	GA1, (Improved agricultural grassland) PB4, (Cutover bog)	Female seen travelling over improved grassland and cutover bog.	JH
HH003	28/01/2019	10:05:00	Hen Harrier	1	PB4, (Cutover bog) PB1, (Raised bog)	Male hen harrier travelling over cutover bog and landing on area of raised bog in rank heather for 40 mins. Still in heather once leaving. Possible roost location.	JH
HH004	11/02/2019	13:22:00	Hen Harrier	1	PB4, (Cutover bog)	Female hunting over bog	JH
HH005	04/03/2019	10:23:00	Hen Harrier	1		Female hunting over flooded area and reed beds at Noggus bog	JH

Incidental Observations						
Date	Survey Type	Location	Species	No. of Birds	Notes	Surveyor
24/09/2019	Wildfowl Counts	Close to VP7	Hen Harrier	1	Female HH hunting on 2 occasions over PB4 WS1	JH
12/09/2018	Commuting/ Migratory VP	CMVP3	Hen Harrier	1	Male HH hunting along Reedbeds and Callows on a number of occasions during VP Survey	JH
21/09/2018	Commuting/ Migratory VP	CMVP3	Hen Harrier	1	Male HH hunting over Reedbeds 18:10 PM	JH




Map Legend

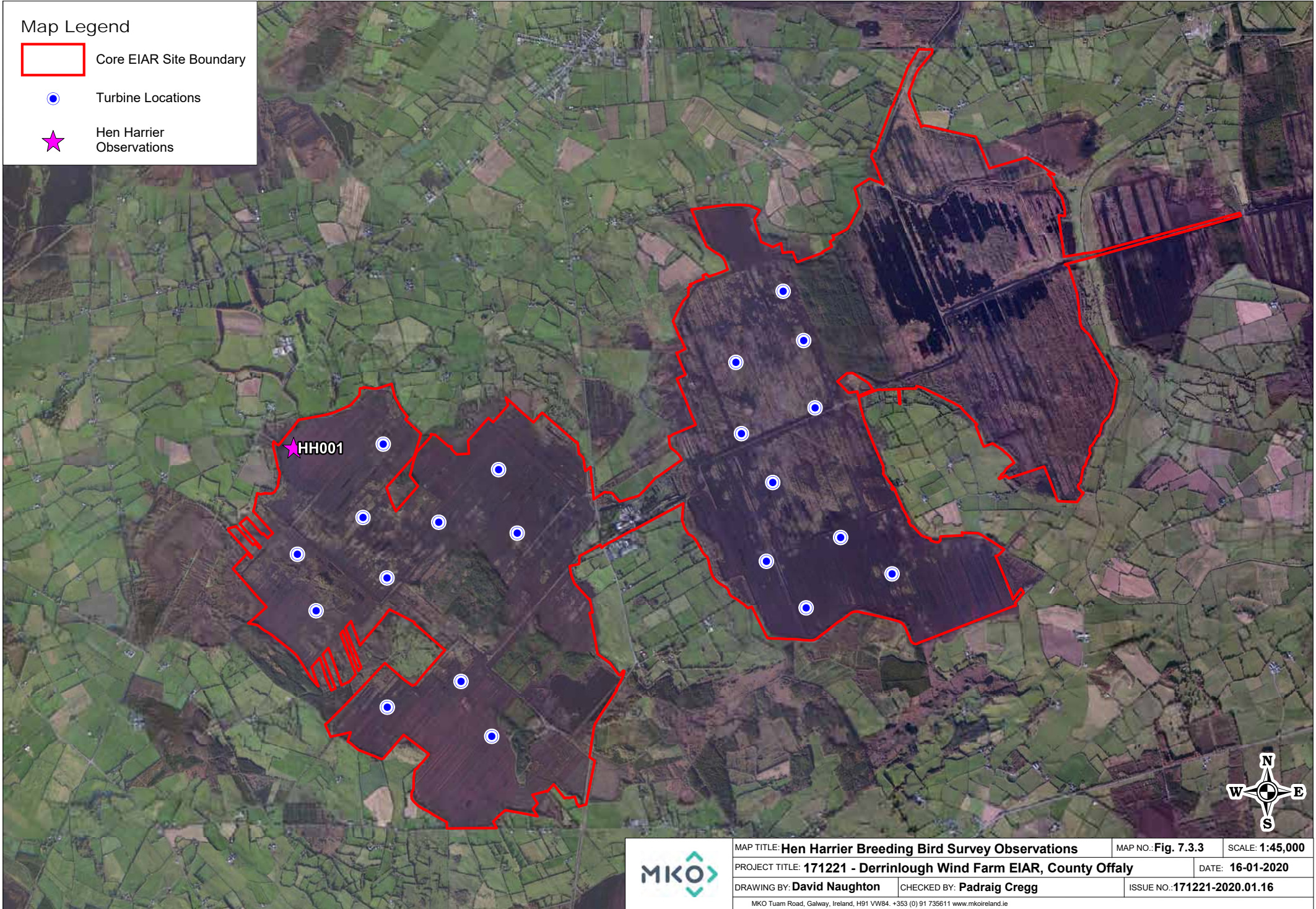
- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ Vantage Point Locations
- Hen Harrier VP Flights



	MAP TITLE: Hen Harrier VP Flights (Oct 2017 - Sep 2019)	MAP NO.: Fig. 7.1.3	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Windfarm County Offaly		DATE: 16.01.2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16	
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie			

Map Legend

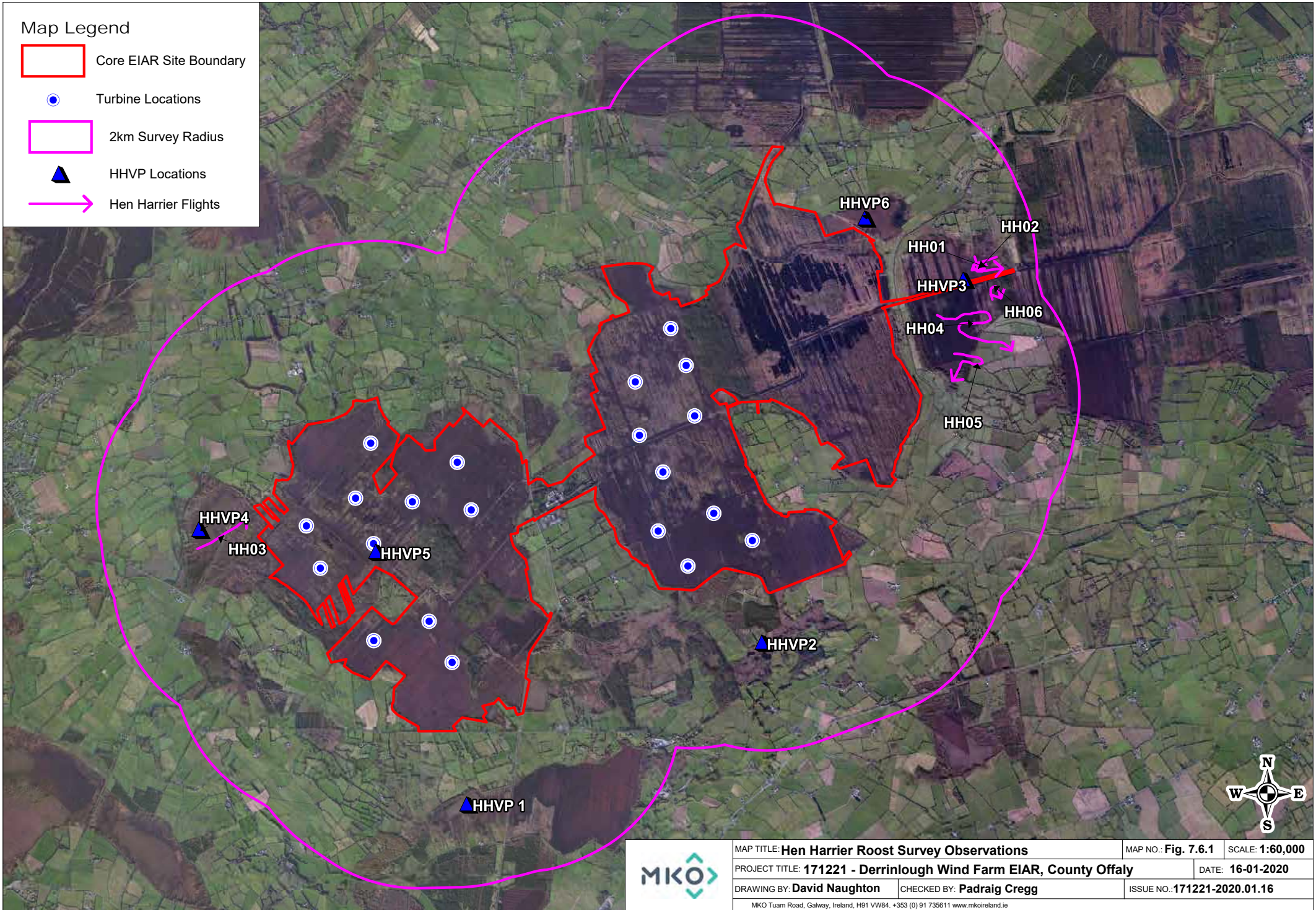
-  Core EIAR Site Boundary
-  Turbine Locations
-  Hen Harrier Observations



	MAP TITLE: Hen Harrier Breeding Bird Survey Observations	MAP NO.: Fig. 7.3.3	SCALE: 1:45,000
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly	DATE: 16-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16
	<small>MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie</small>		







Map Legend

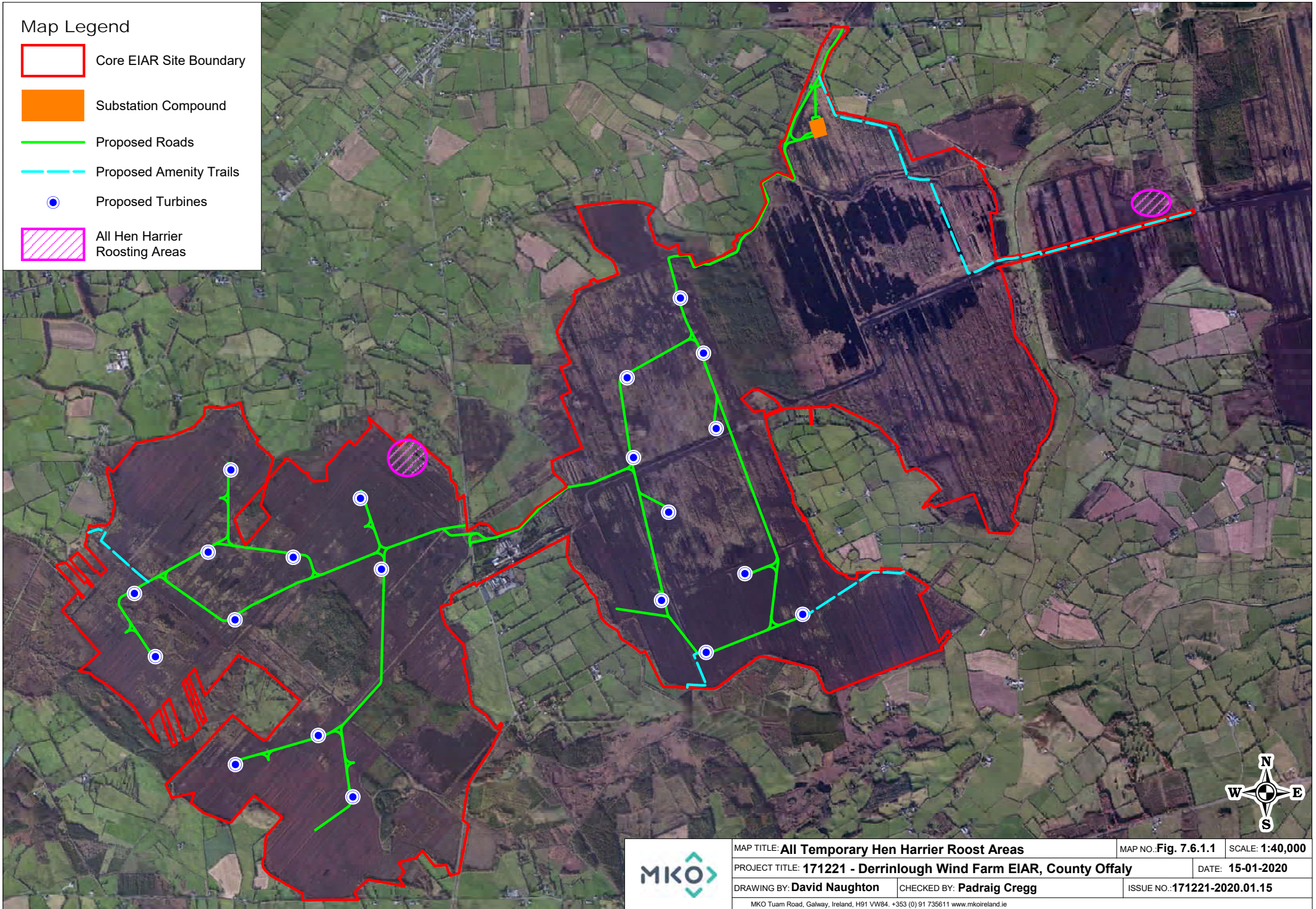
- Core EIAR Site Boundary
- Turbine Locations
- 2km Survey Radius
- ▲ HHVP Locations
- Hen Harrier Flights



	MAP TITLE: Hen Harrier Roost Survey Observations		MAP NO.: Fig. 7.6.1	SCALE: 1:60,000	
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly			DATE: 16-01-2020	
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16	
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie				






Map Legend

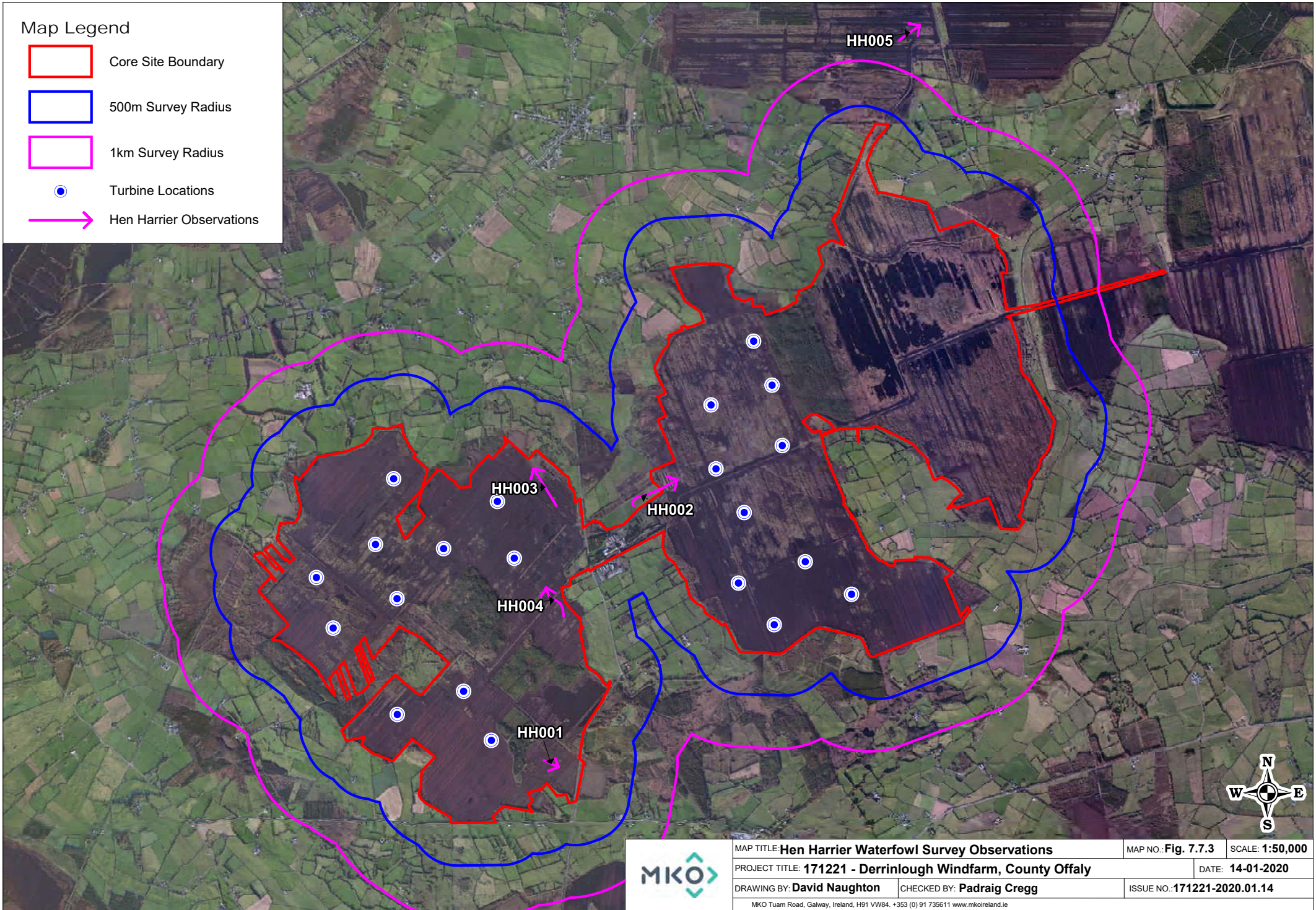
-  Core EIAR Site Boundary
-  Substation Compound
-  Proposed Roads
-  Proposed Amenity Trails
-  Proposed Turbines
-  All Hen Harrier Roosting Areas



	MAP TITLE: All Temporary Hen Harrier Roost Areas		MAP NO.: Fig. 7.6.1.1	SCALE: 1:40,000
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly			DATE: 15-01-2020
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.15	
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkofireland.ie			

Map Legend

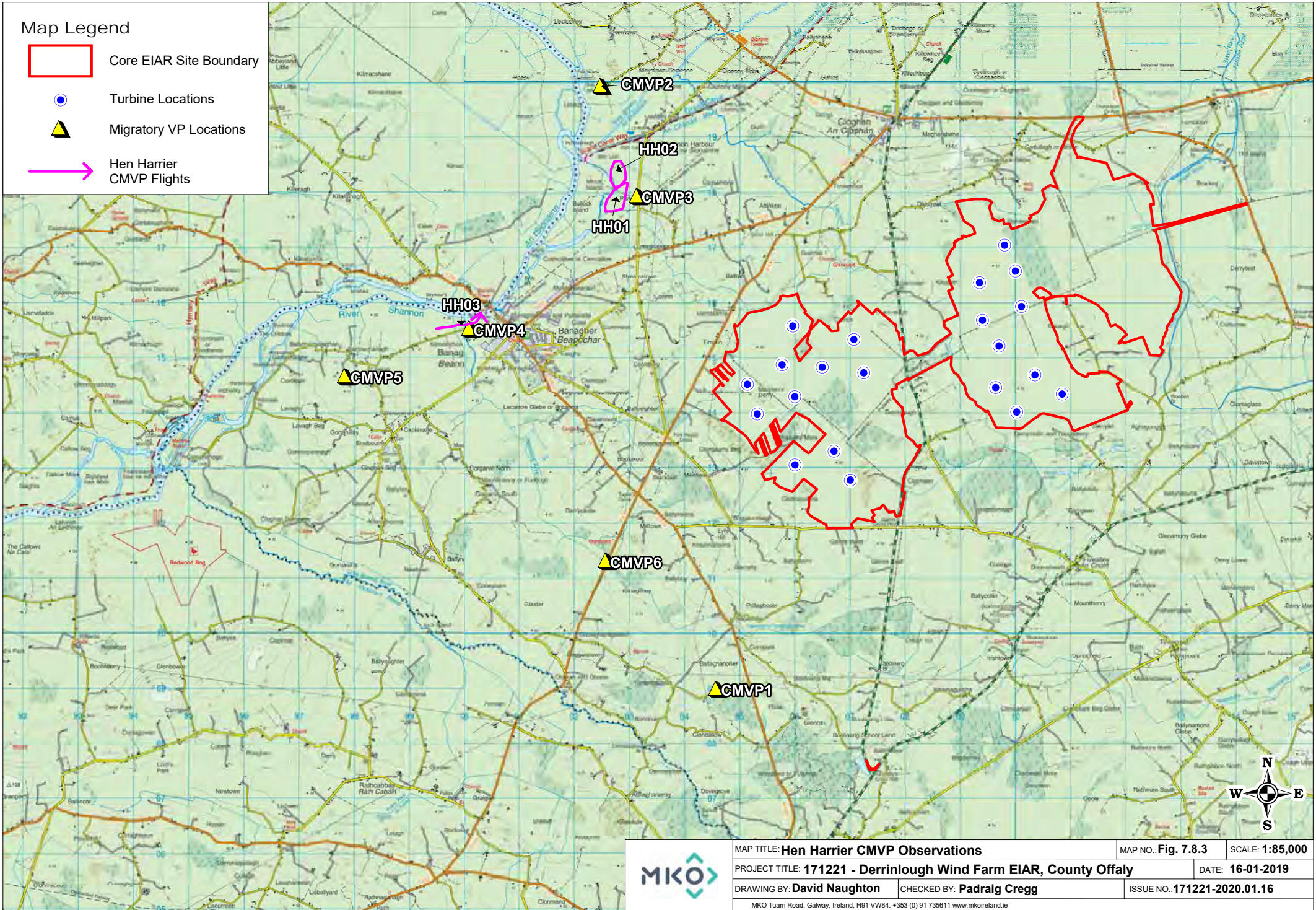
-  Core Site Boundary
-  500m Survey Radius
-  1km Survey Radius
-  Turbine Locations
-  Hen Harrier Observations



	MAP TITLE: Hen Harrier Waterfowl Survey Observations	MAP NO.: Fig. 7.7.3	SCALE: 1:50,000
	PROJECT TITLE: 171221 - Derrinlough Windfarm, County Offaly	DATE: 14-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.14
	<small>MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie</small>		

Map Legend

- Core EIAR Site Boundary
- Turbine Locations
- ▲ Migratory VP Locations
- Hen Harrier CMVP Flights



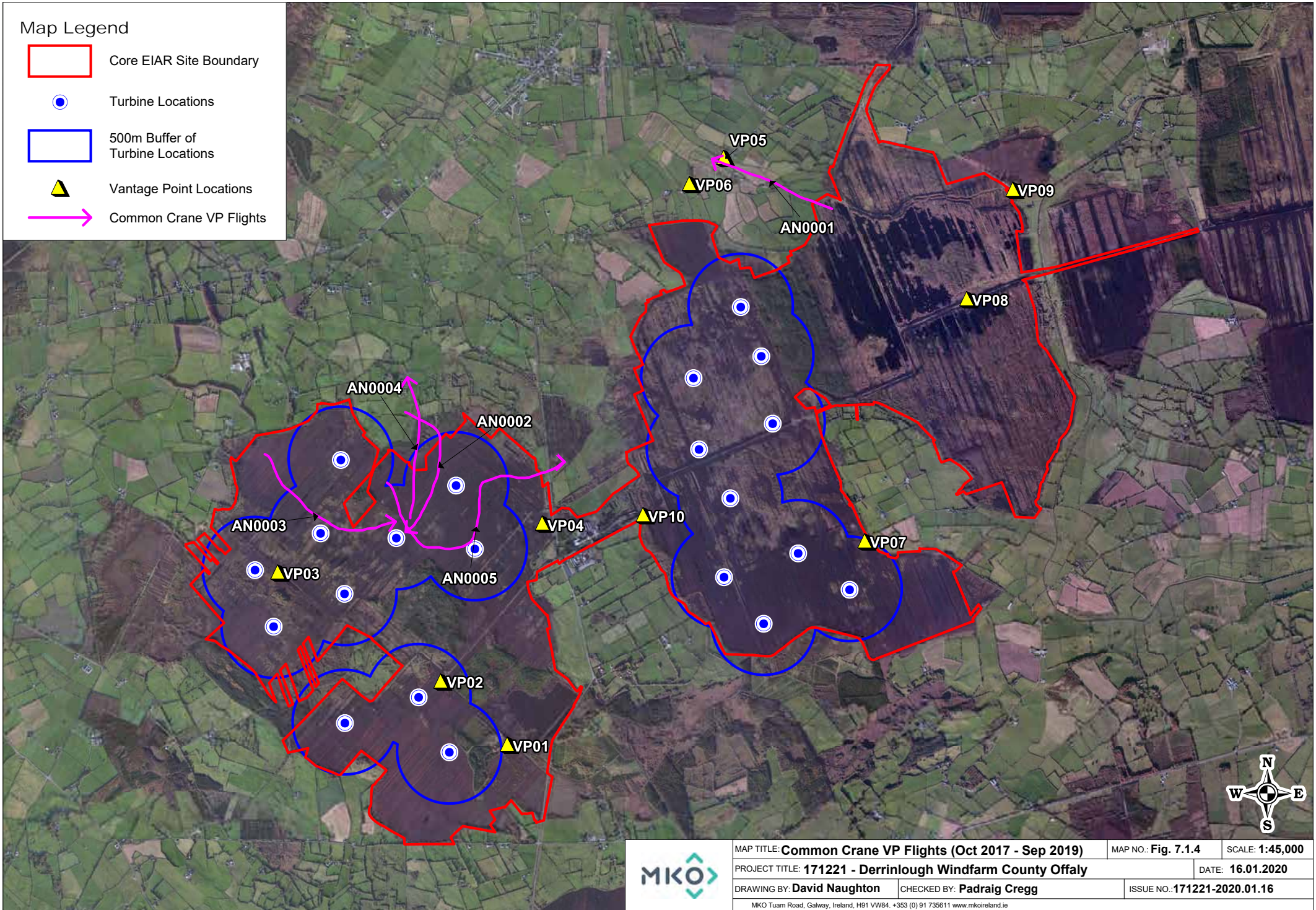
	MAP TITLE: Hen Harrier CMVP Observations		MAP NO.: Fig. 7.8.3	SCALE: 1:85,000
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly			DATE: 16-01-2019
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16	
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Table 4 Common Crane Survey Data

Vantage Point Survey												
Map Ref.	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	Surveyor
AN0001	04/12/2018	5	Crane	4	12:57:00	86			86		PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) GA1, (Improved agricultural grassland) Travelling. In a North-westerly Direction.	JH
AN0002	07/02/2019	4	Crane	4	15:41:00	122	20	102			WD4, (Conifer plantation) PB4, (Cutover bog) Landing on PB4	JH
AN0003	12/02/2019	3	Crane	4	14:35:00	110	20	90			PB4, (Cutover bog) WD4, (Conifer plantation) Landing on PB4	JH
AN0004	07/03/2019	4	Crane	1	07:17:00	124	70	54			PB4, (Cutover bog) WD4, (Conifer plantation) Leaving site after roosting overnight	JH
AN0005	07/03/2019	4	Crane	1	10:14:00	180			180		PB4, (Cutover bog) WD4, (Conifer plantation) Gliding on Wing and Flying East	JH

Map Legend

- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ Vantage Point Locations
- Common Crane VP Flights



	MAP TITLE: Common Crane VP Flights (Oct 2017 - Sep 2019)	MAP NO.: Fig. 7.1.4	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Windfarm County Offaly		DATE: 16.01.2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16	
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Table 5 Kingfisher Survey Data

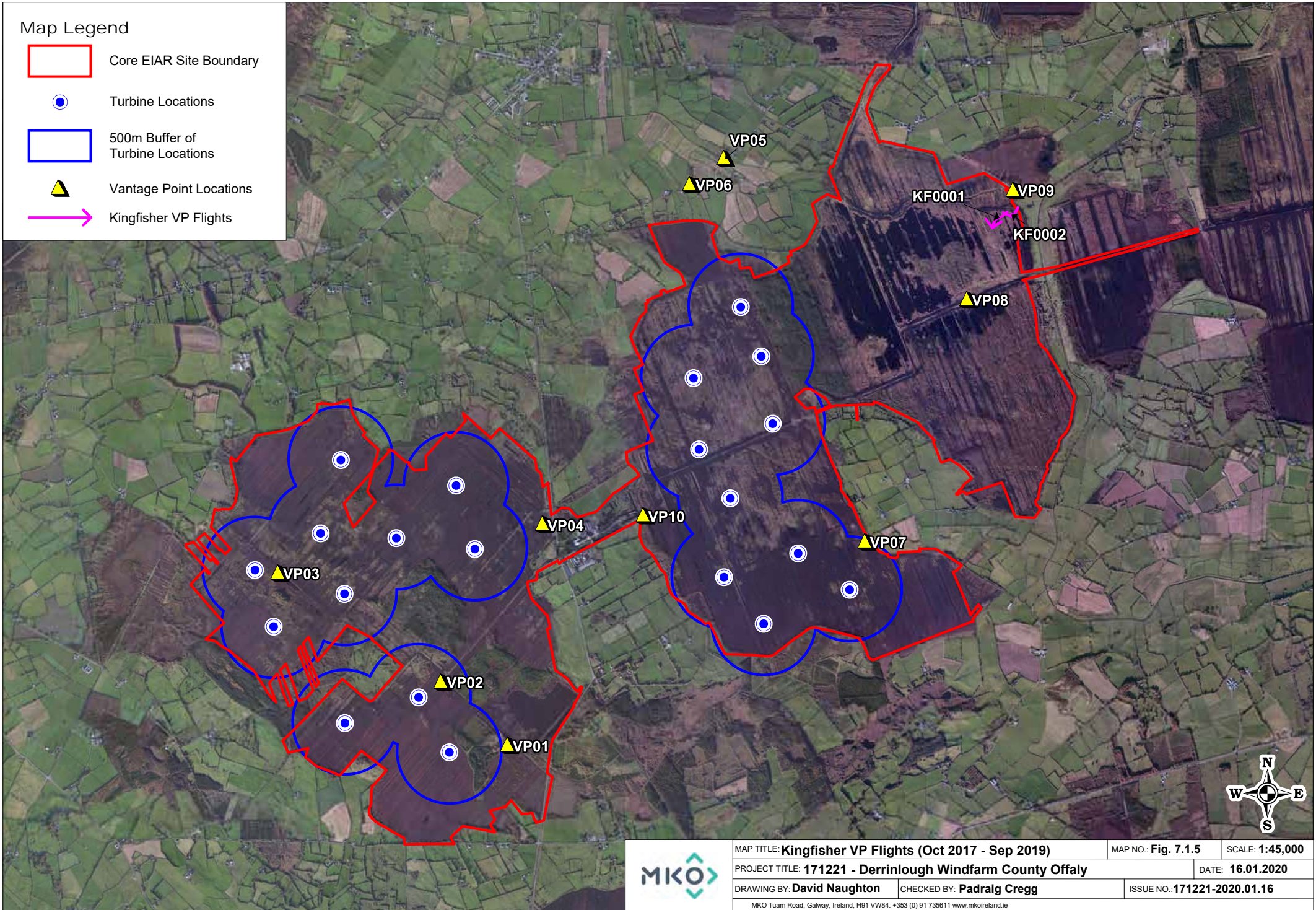
Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 PCH (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
KF0001	20/09/2018	9	Kingfisher	1	11:26:00	20	20				PB4, (Cutover bog) Travelling	JH
KF0002	19/09/2019	9	Kingfisher	1	07:59:21	20		20			FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Landing on bulrush stem and fishing in flooded area	JH

Breeding Bird Survey						
Map Ref. No.	Survey Date	Time of observation	Species	No. of birds	Habitat and Activity	Surveyor
KF001	21/06/2018	08:23:00	Kingfisher	1	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Travelling along drainage ditch	JH
KF002	12/04/2019	09:53:16	Kingfisher	1	PB4, (Cutover bog) FW4, (Drainage ditches) Flying and calling	JH
KF003	23/07/2019	12:42:53	Kingfisher	1	PB4, (Cutover bog)	JH

Winter Transect/Waterfowl Survey					
Map Ref.	Date	Species	No. of birds	Comments	Surveyor
KF001	03/10/2018	Kingfisher	1	Travelling above FW	JH
KF002	04/03/2019	Kingfisher	1		JH




Map Legend

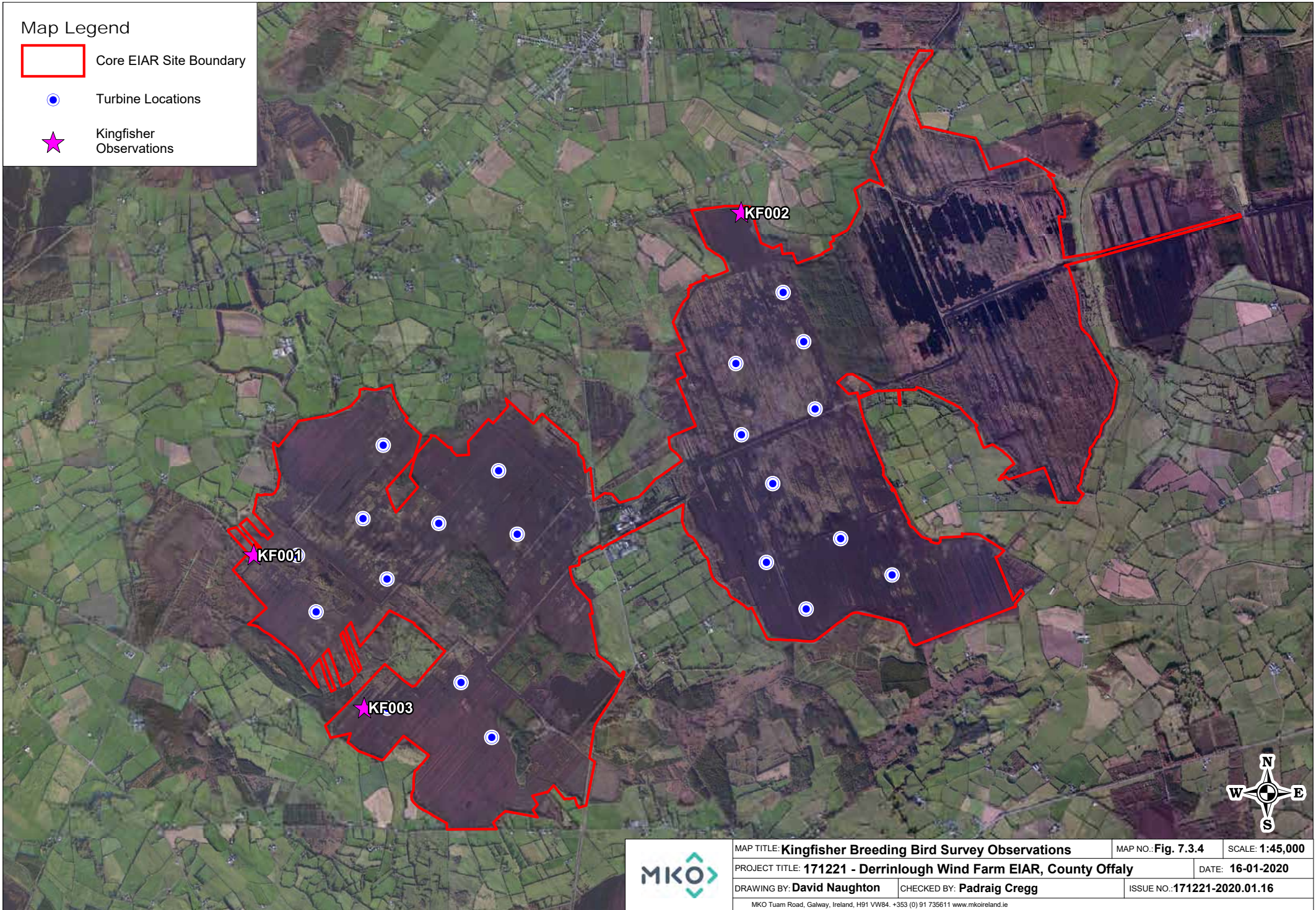
- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ Vantage Point Locations
- ➔ Kingfisher VP Flights



	MAP TITLE: Kingfisher VP Flights (Oct 2017 - Sep 2019)		MAP NO.: Fig. 7.1.5	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Windfarm County Offaly			DATE: 16.01.2020	
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.16
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie				







Map Legend

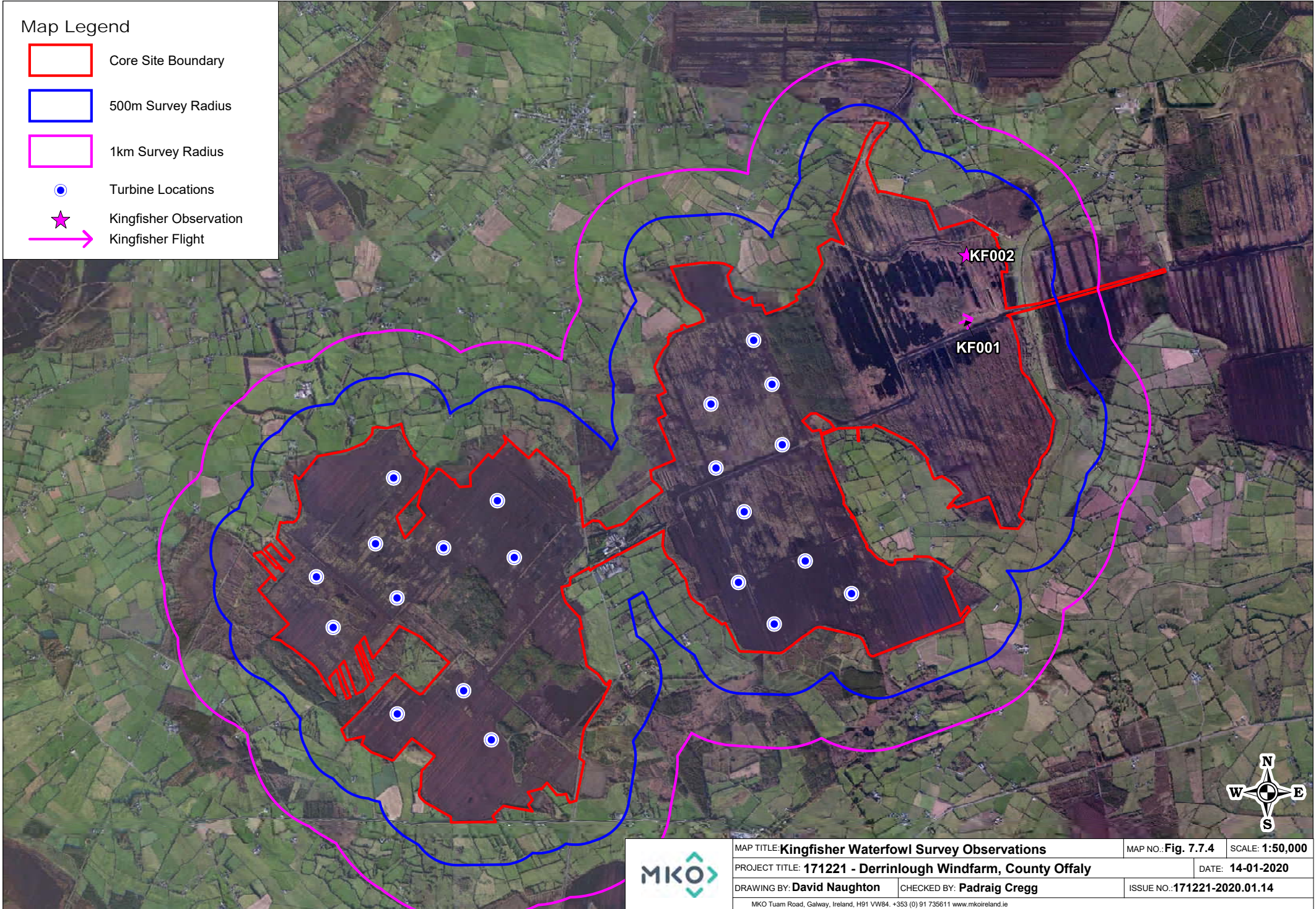
-  Core EIAR Site Boundary
-  Turbine Locations
-  Kingfisher Observations



	MAP TITLE: Kingfisher Breeding Bird Survey Observations	MAP NO.: Fig. 7.3.4	SCALE: 1:45,000
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly	DATE: 16-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16
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Map Legend

-  Core Site Boundary
-  500m Survey Radius
-  1km Survey Radius
-  Turbine Locations
-  Kingfisher Observation
-  Kingfisher Flight



	MAP TITLE: Kingfisher Waterfowl Survey Observations	MAP NO.: Fig. 7.7.4	SCALE: 1:50,000
	PROJECT TITLE: 171221 - Derrinlough Windfarm, County Offaly	DATE: 14-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.14
	<small>MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie</small>		

Table 6 Little Egret Survey Data

Vantage Point Survey												
Map Ref.	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	Surveyor
ET0022	13/12/2017	5	Little Egret	1	09:50:00	20			20		Flying W off site S of VP.	SON
ET0023	08/01/2018	6	Little Egret	1	14:00:00	120			120		Flying from W-E across S end of site.	SON
ET0001	23/07/2018	4	Little Egret	1	11:56:00	180		30	85	65	PB4, (Cutover bog) Travelling	JH
ET0002	24/07/2018	8	Little Egret	1	10:32:00	56	56				PB4, (Cutover bog) Travelling	JH
ET0004	24/07/2018	8	Little Egret	1	13:37:00	50	50				PB4, (Cutover bog) Travelling	JH
ET0003	24/07/2018	8	Little Egret	1	12:45:00	28	28				PB4, (Cutover bog) Landing on wet area of PB4	JH
ET0005	22/08/2018	9	Little Egret	1	13:32:00	76	76				PB4, (Cutover bog) Travelling	JH
ET0015	16/10/2018	8	Little Egret	2	16:37:00	33	33				PB4, (Cutover bog) travelling, landing in wetland	TR
ET0016	16/10/2018	8	Little Egret	2	18:00:00	140		140			PB4, (Cutover bog) travelling	TR
ET0017	20/11/2018	6	Little Egret	5	08:18:00	60	60				PB4, (Cutover bog) travelling	TR
ET0018	30/11/2018	8	Little Egret	1	08:10:00	30	30				PB4, (Cutover bog) travelling, landing wetland	TR
ET0019	30/11/2018	8	Little Egret	1	08:55:00	25	25				PB4, (Cutover bog)	TR
ET0020	30/11/2018	8	Little Egret	1	09:15:00	15	15				PB4, (Cutover bog)	TR
ET0021	30/11/2018	8	Little Egret	1	11:35:00	30	30				PB4, (Cutover bog)	TR
ET0006	11/12/2018	8	Little Egret	1	12:27:00	33	33				PB4, (Cutover bog) WD4, (Conifer plantation) Landing on wet area of PB4	JH
ET0007	12/12/2018	9	Little Egret	1	08:11:00	42	42				PB4, (Cutover bog) Landing on wet area of PB4	JH
ET0008	04/01/2019	1	Little Egret	1	16:17:00	94			94		FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Travelling	JH

Vantage Point Survey												
Map Ref.	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	Surveyor
ET0010	16/07/2019	8	Little Egret	1	09:23:01	160		160			PB4, (Cutover bog) Travelling	JH
ET0011	16/07/2019	8	Little Egret	1	09:39:56	65		65			PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Moving location on FL2	JH
ET0009	16/07/2019	8	Little Egret	2	09:09:16	40		40			PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Landing on flooded area	JH
ET0013	07/08/2019	8	Little Egret	1	20:09:55	66		66			PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Landing on flooded area	JH
ET0012	07/08/2019	9	Little Egret	2	15:55:43	35		35			PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Landing on flooded area	JH
ET0014	08/08/2019	9	Little Egret	1	19:39:19	47		47			PB4, (Cutover bog) Travelling	JH

Breeding Bird Survey							
Map Ref. No.	Survey Date	Time of observation	Species	No. of birds	Habitat	Surveyor	
ET001	07/06/2018	06:56:00	Little Egret	2	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Foraging on flooded area	JH	

Winter Transect/Waterfowl Survey								
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Habitat	Comments	Surveyor
ET001	10/08/2018		Little Egret	1	Feeding/Roosting	FL8, (Other artificial lakes and ponds)		JK

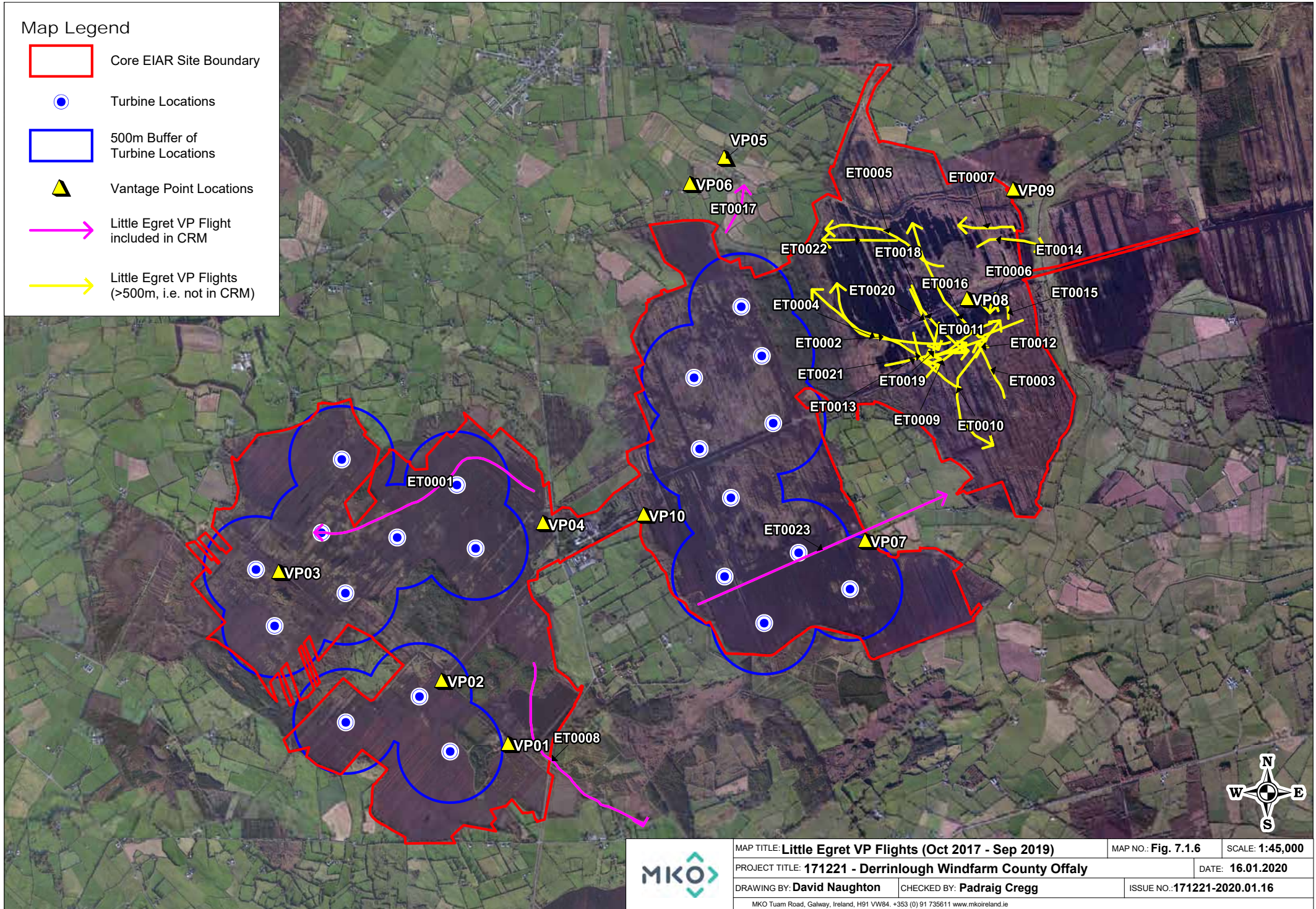
Winter Transect/Waterfowl Survey								
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Habitat	Comments	Surveyor
ET002	24/08/2018		Little Egret	2	Feeding/Roosting	FL8, (Other artificial lakes and ponds)		JK
ET003	17/09/2018		Little Egret	1	Feeding/Roosting			JK
ET004	19/09/2018		Little Egret	2	Feeding/Roosting			JK
ET005	24/09/2018		Little Egret	2				JK
ET006	30/10/2018		Little Egret	1				JH
ET007	05/11/2018	14:23:00	Little Egret	1	Foraging	PB4, (Cutover bog)	Foraging on flooded area of cutover bog	JH
ET008	12/11/2018	11:58:00	Little Egret	1		PB4, (Cutover bog)	Flying and landing on flooded area of bog	JH
ET009	12/11/2018		Little Egret	2			Noggus Bog	JH
ET010	27/11/2018	10:44:00	Little Egret	1	Roosting & Foraging	PB4, (Cutover bog)	Roosting and foraging on flooded area of cutover bog	JH
ET011	05/12/2018	10:34:00	Little Egret	1	Foraging	PB4, (Cutover bog)	Foraging on flooded area of cutover bog	JH
ET012	02/01/2019		Little Egret	1				JH
ET013	02/01/2019		Little Egret	1				JH
ET014	02/01/2019		Little Egret	1			Noggus Bog	JH
ET015	28/01/2019		Little Egret	1				JH
ET016	28/01/2019		Little Egret	1				JH
ET017	28/01/2019		Little Egret	1				JH
ET018	01/02/2019		Little Egret	1				JH
ET019	01/02/2019		Little Egret	1			Noggus Bog	JH
ET020	04/03/2019		Little Egret	2				JH
ET021	28/03/2019		Little Egret	1			Noggus Bog	JH

Winter Transect/Waterfowl Survey								
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Habitat	Comments	Surveyor
ET022	28/03/2019		Little Egret	1			Noggus Bog	JH
ET023	03/05/2019	14:09:06	Little Egret	1	Foraging	FL2, (Acid oligotrophic lakes)		JH
ET024	03/09/2019	09:32:06	Little Egret	2	Foraging	FL2, (Acid oligotrophic lakes) PB4, (Cutover bog)		JH

Migratory Bird Survey												
Map 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 (25-180m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
ET01	19/02/2019	CMVP1	Little Egret	1	09:02:00	110			110		GA1, (Improved agricultural grassland) Travelling	JH




Map Legend

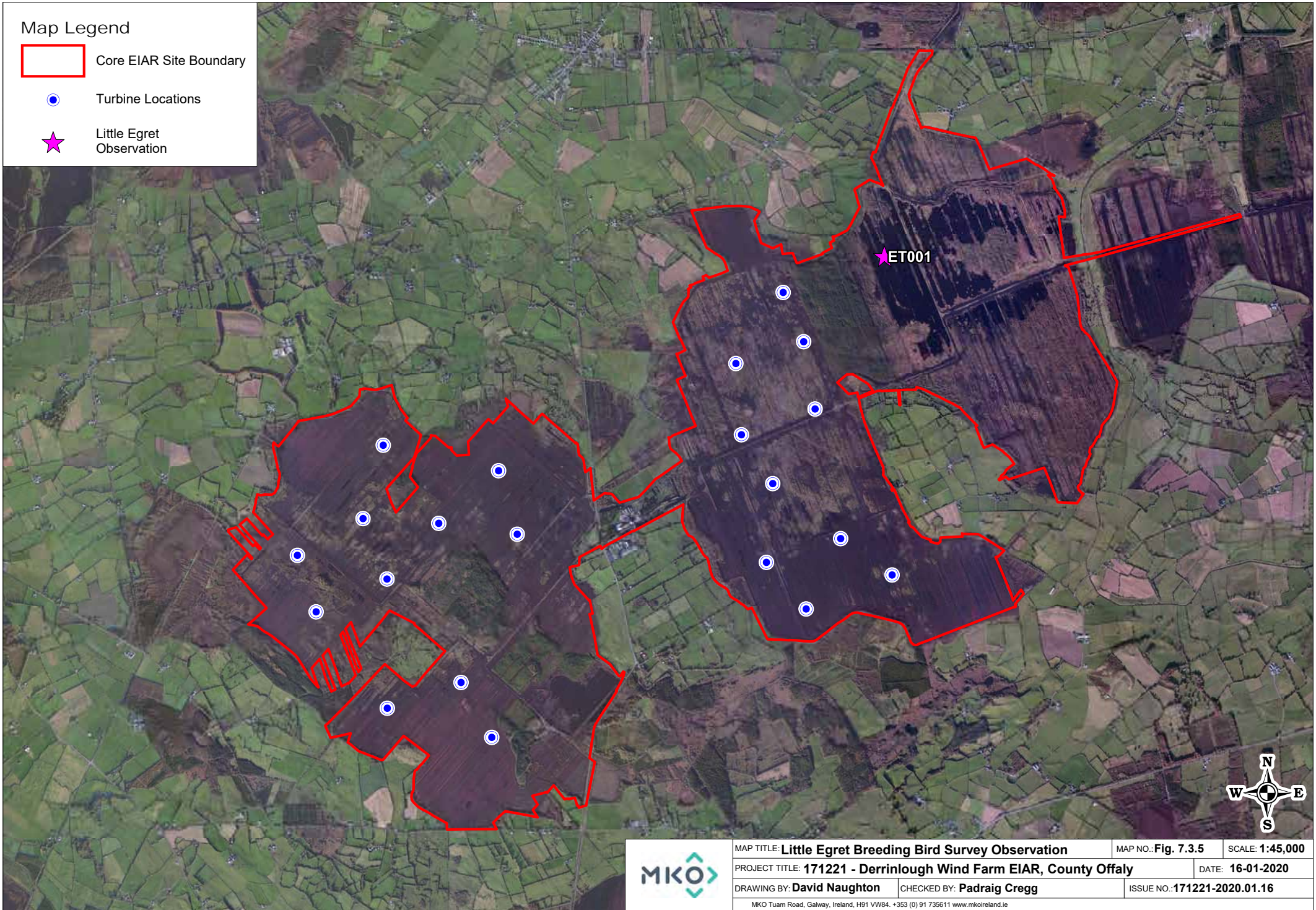
- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ Vantage Point Locations
- Little Egret VP Flight included in CRM
- Little Egret VP Flights (>500m, i.e. not in CRM)



	MAP TITLE: Little Egret VP Flights (Oct 2017 - Sep 2019)	MAP NO.: Fig. 7.1.6	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Windfarm County Offaly		DATE: 16.01.2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16	
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie			

Map Legend

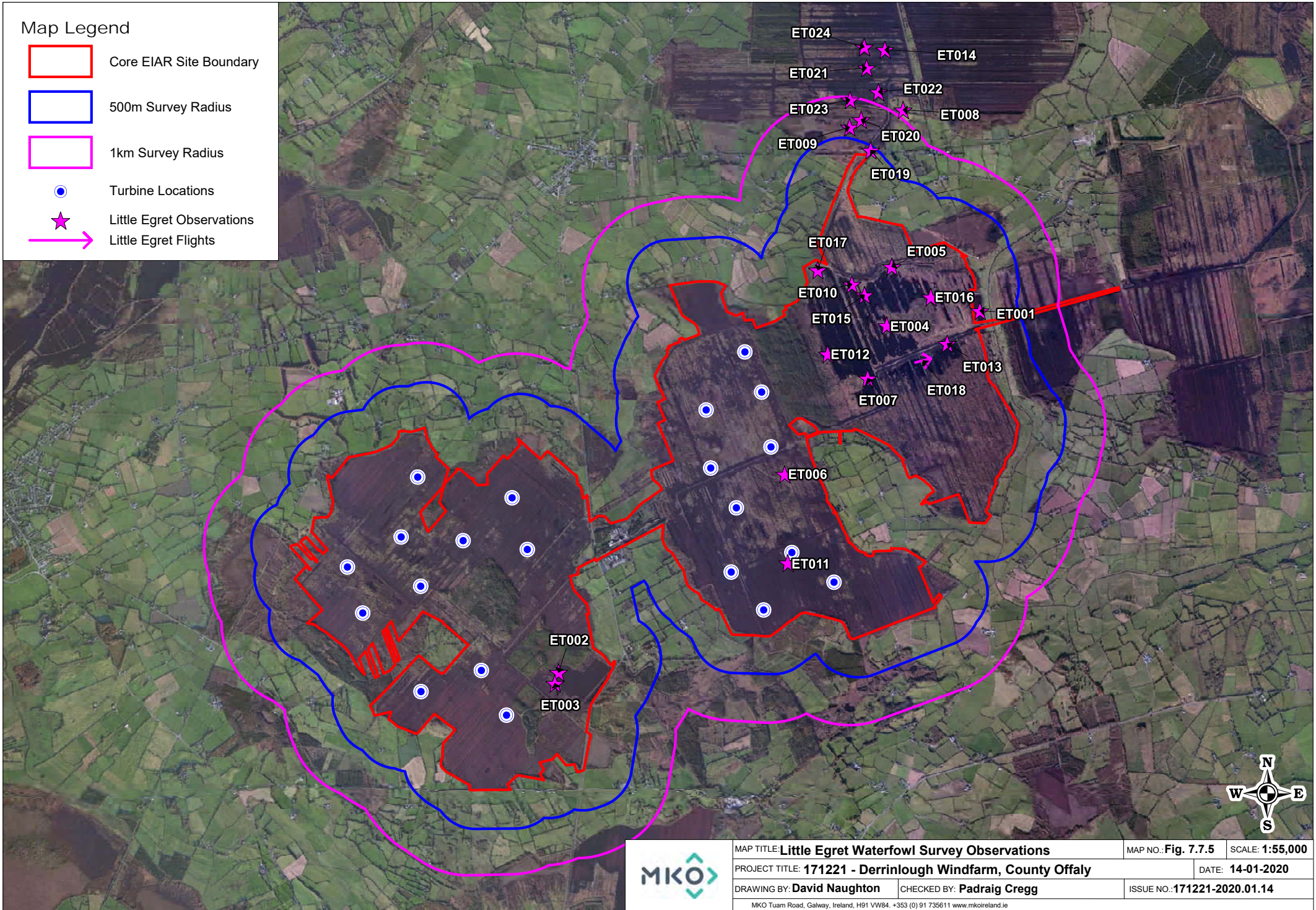
-  Core EIAR Site Boundary
-  Turbine Locations
-  Little Egret Observation



	MAP TITLE: Little Egret Breeding Bird Survey Observation	MAP NO.: Fig. 7.3.5	SCALE: 1:45,000
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly	DATE: 16-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16
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Map Legend

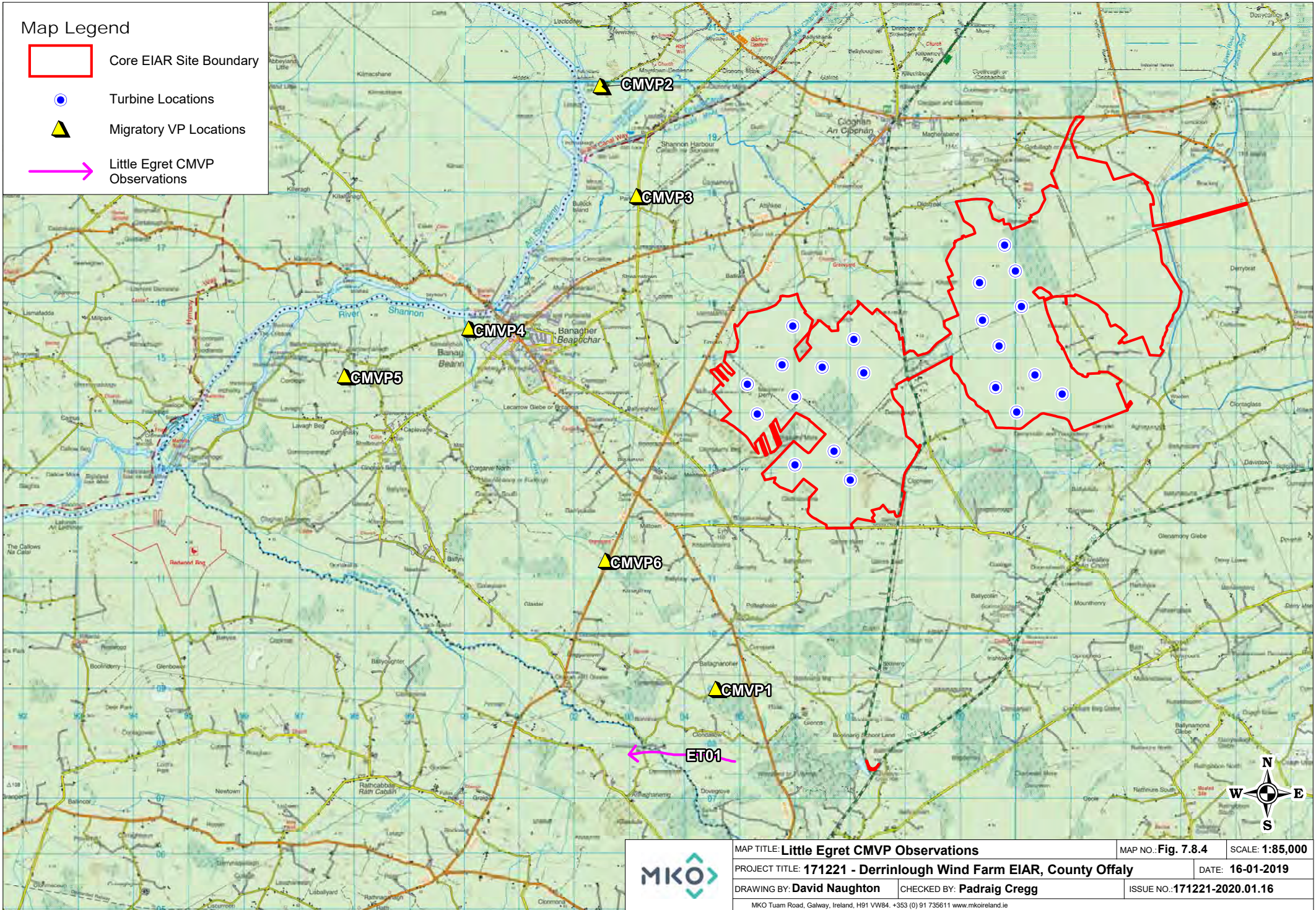
- Core EIAR Site Boundary
- 500m Survey Radius
- 1km Survey Radius
- Turbine Locations
- ★ Little Egret Observations
- Little Egret Flights



	MAP TITLE: Little Egret Waterfowl Survey Observations		MAP NO.: Fig. 7.7.5	SCALE: 1:55,000	
	PROJECT TITLE: 171221 - Derrinlough Windfarm, County Offaly			DATE: 14-01-2020	
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.14
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Map Legend

- Core EIAR Site Boundary
- Turbine Locations
- ▲ Migratory VP Locations
- Little Egret CMVP Observations



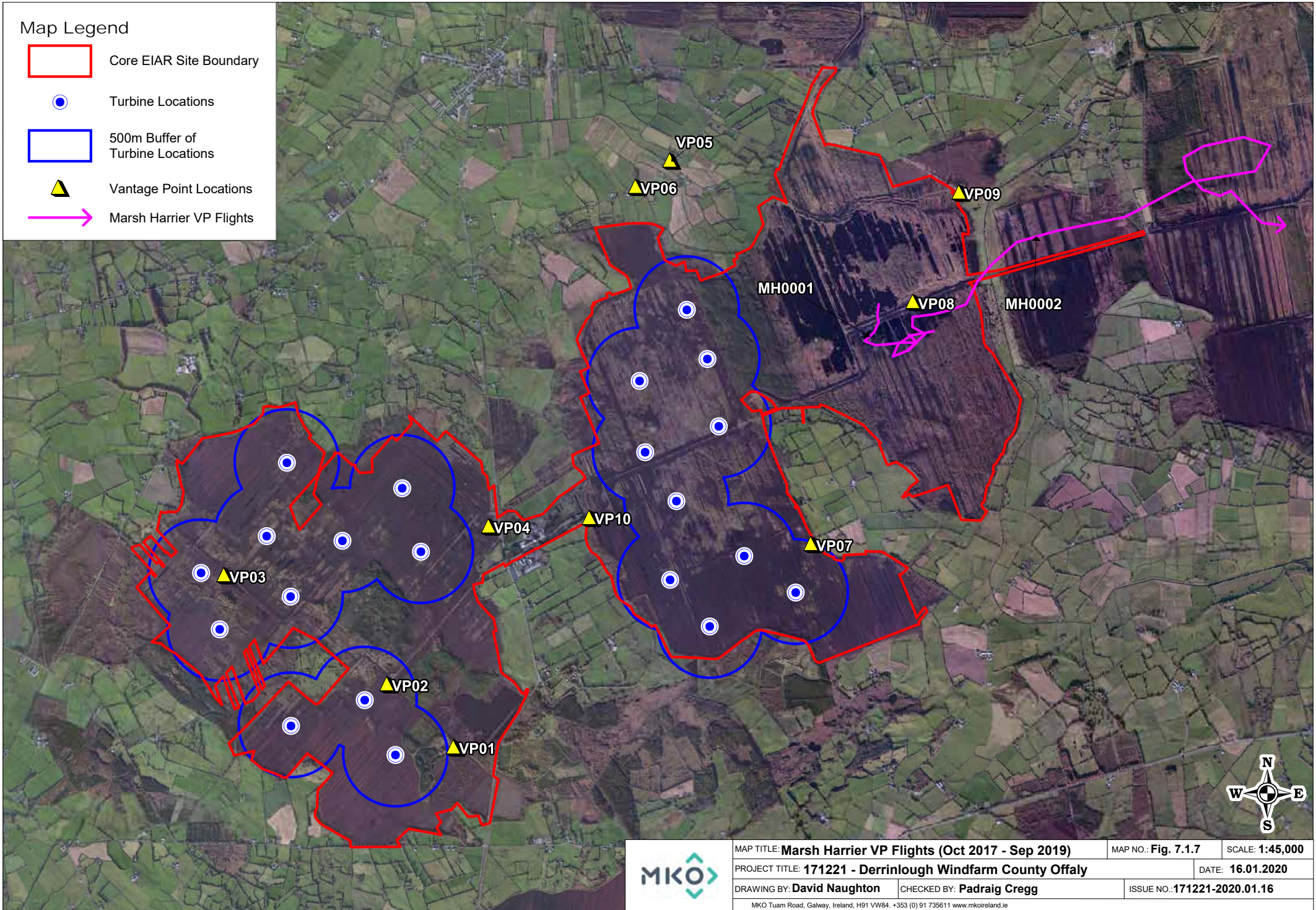
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	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly			DATE: 16-01-2019	
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.16
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie				

Table 7 Marsh Harrier Survey Data

Vantage Point Survey												
Map Ref.	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	Surveyor
MH0001	25/04/2019	8	Marsh Harrier	1	17:45:00	120	0	0	0	0	PB4, (Cutover bog) wo light green wing tags appeared to be numbered- hunting wetland, sub-adult	TR
MH0002	25/04/2019	8	Marsh Harrier	1	17:48:00	960	0	80	820	0	PB4, (Cutover bog) WD4, (Conifer plantation) GS4, (Wet grassland) hunting wetland before ravelling off site, high circling for 15mins off site, sub-adult	TR

Map Legend

- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ Vantage Point Locations
- Marsh Harrier VP Flights



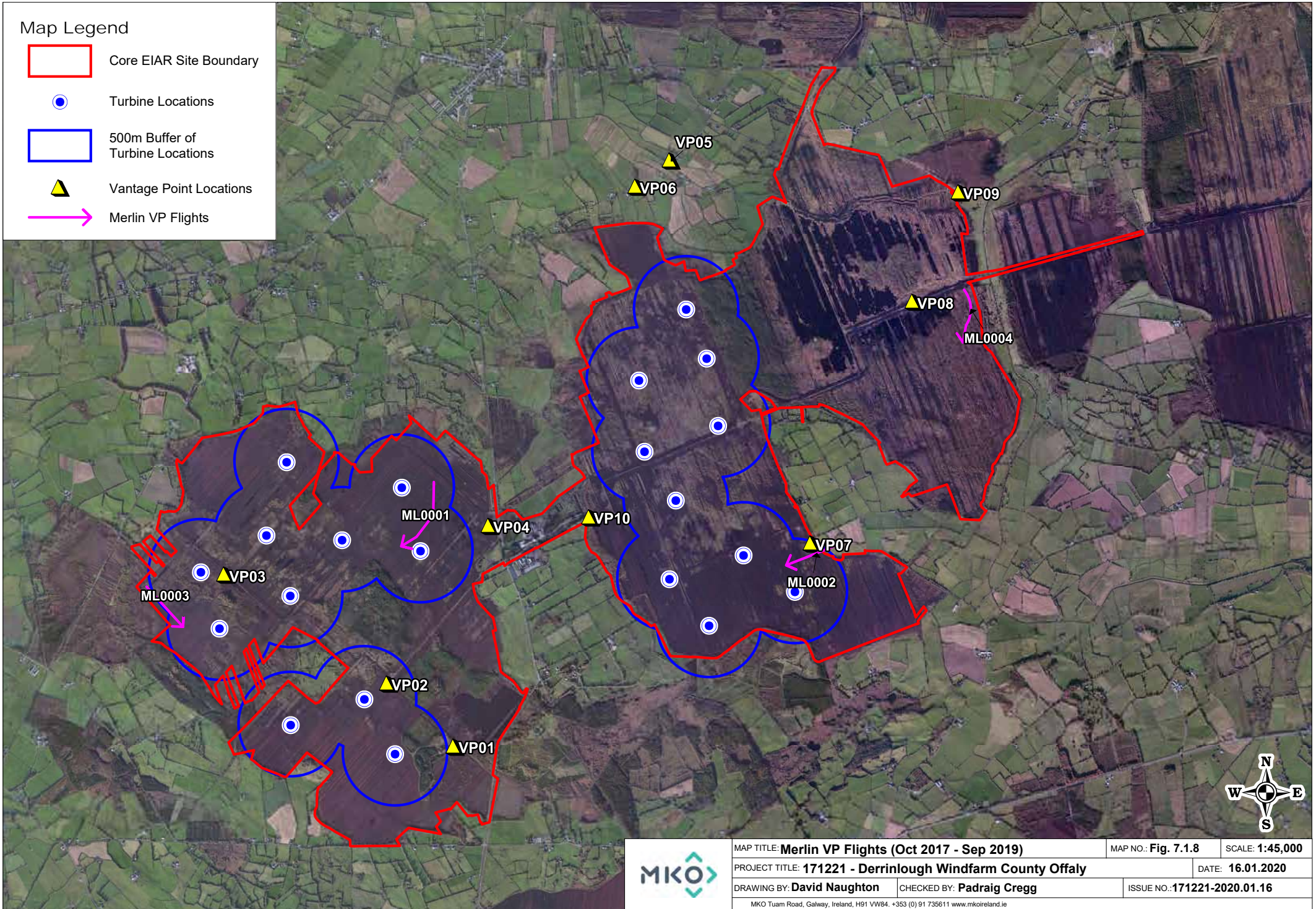
	MAP TITLE: Marsh Harrier VP Flights (Oct 2017 - Sep 2019)	MAP NO.: Fig. 7.1.7	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Windfarm County Offaly		DATE: 16.01.2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16	
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Table 8 Merlin Survey Data

Vantage Point Survey												
Map Ref.	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	Surveyor
ML0001	18/12/2017	4	Merlin	1	09:04:00	30	15	15			Seen perched for c.40 min – then flew southwest along scrub	BM
ML0002	05/02/2018	7	Merlin	1	12:50:00	180	90	90			Female flew in from E hunting low. Landed in a tree 150m W of VP 40sec flew W hunting. Landed on open bog 10 sec. Flew into drain didn't see what way she went.	SON
ML0003	20/02/2018	2	Merlin	1	14:40:00	20	10	10			Flying fast after prey item– dropped and not seen again	JA
ML0004	20/03/2018	8	Merlin	1	09:12:00	20	10	10			Male on side of embankment for c.20 min – then flew south into scrub	BM

Map Legend

- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ Vantage Point Locations
- Merlin VP Flights



	MAP TITLE: Merlin VP Flights (Oct 2017 - Sep 2019)		MAP NO.: Fig. 7.1.8	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Windfarm County Offaly			DATE: 16.01.2020	
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.16
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Table 9 Peregrine Survey Data

Vantage Point Survey												
Map Ref.	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	Surveyor
PE0015	25/10/2017	1	Peregrine	1	09:02:00	45			45		Male after Lapwing but not successful.	BM
PE0016	14/11/2017	5	Peregrine	1	16:42:00	180			180		Hunting the Starlings no kills.	SON
PE0017	09/12/2017	10	Peregrine	1	16:06:00	30			30		Flew in fast and direct - large bird female type	BM
PE0018	26/01/2018	4	Peregrine	2	14:55:00	90			90		Probable pair – some interaction	JA
PE0019	02/02/2018	6	Peregrine	1	08:04:00	60			60		Flying E-W just south of VP On/Off site.	SON
PE0020	26/02/2018	10	Peregrine	1	17:17:00	90			90		Flying fast	BM
PE0001	26/04/2018	10	Peregrine	1	10:45:00	52		52			PB4, (Cutover bog) travelling	JH
PE0002	05/06/2018	6	Peregrine	1	13:14:00	38		38			GA1, (Improved agricultural grassland) Travelling	JH
PE0003	19/07/2018	3	Peregrine	1	09:25:00	383		46	80	257	PB4, (Cutover bog) Upward spiralling flight and flying on	JH
PE0004	19/07/2018	3	Peregrine	1	12:32:00	259			70	189	PB4, (Cutover bog) WD4, (Conifer plantation) Upward spiralling flight	JH
PE0005	17/10/2018	9	Peregrine	1	18:45:00	40		20	20		PB4, (Cutover bog) travelling	TR
PE0007	06/11/2018	1	Peregrine	1	11:46:00	81			81		PB4, (Cutover bog) WD4, (Conifer plantation) Upward spiralling flight	JH
PE0006	06/11/2018	1	Peregrine	1	10:34:00	175			175		PB4, (Cutover bog) FL1, (Dystrophic lakes) Hunting over Flooded area of PB4	JH
PE0008	14/11/2018	7	Peregrine	1	12:20:00	40	40				PB4, (Cutover bog) Travelling	TR
PE0009	19/12/2018	10	Peregrine	1	12:25:00	100		100			PB4, (Cutover bog) travelling	TR
PE0010	12/02/2019	3	Peregrine	1	12:48:00	156			40	116	PB4, (Cutover bog) Upward Spiralling Flight	JH

Vantage Point Survey												
Map Ref.	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	Surveyor
PE0011	01/03/2019	1	Peregrine	1	12:03:00	80		80	0		PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) WD4, (Conifer plantation) Travelling	JH
PE0012	23/04/2019	4	Peregrine	1	16:01:35	40		5	35		PB4, (Cutover bog) WD4, (Conifer plantation) Soaring and hunting mode	JH
PE0013	01/08/2019	1	Peregrine	1	12:20:12	660		60	370		PB2, (Upland blanket bog) hunting disturbing L and CU	TR
PE0014	06/08/2019	5	Peregrine	1	19:41:49	30		10	20		GA1, (Improved agricultural grassland) Inhunting mode. Stoop.	JH

Vantage Point Non-Flight Observations							
Map Ref. No.	Date	VP	Species	No. of Birds	Time	Comments	Surveyor
B#5	23/10/2017	7	Peregrine	1	13:05:00	Perched on a peat pile S/SW of car park	SON
N/A	14/12/2017	7	Peregrine	1	14:33:00	Flew from the W flying E/NE landed on open bog half way between VP and edge of site	SON

Breeding Bird Survey						
Map Ref. No.	Survey Date	Species	No. of birds	Habitat and Activity	Comments	Surveyor
PE001	02/05/2018	Peregrine	1	PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	In height band 2 for 16 seconds - heading westerly in direction	JH

Breeding Raptor Survey							
Map Ref.	Date	Species	No. of Birds	Time of flight	Duration of flight (s)	Notes on habitat and activity	Surveyor
PE001	09/07/2018	Peregrine	1	17:13:00	720	WD, (Highly modified/ non-native woodland) PB4, (Cutover bog) circling, gliding, high; most of flight in vicinity of castle, before departing to NW	P Troake
PE002	10/07/2018	Peregrine	1	07:24:00	10	GA1, (Improved agricultural grassland) low flight	P Troake

Winter Transect/Waterfowl Survey						
Map Ref.	Date	Time of Observation	Species	No. of birds	Notes on habitat and activity	Surveyor
PE001	06/02/2019	10:20:00	Peregrine	1	Travelling and carrying prey item	JH

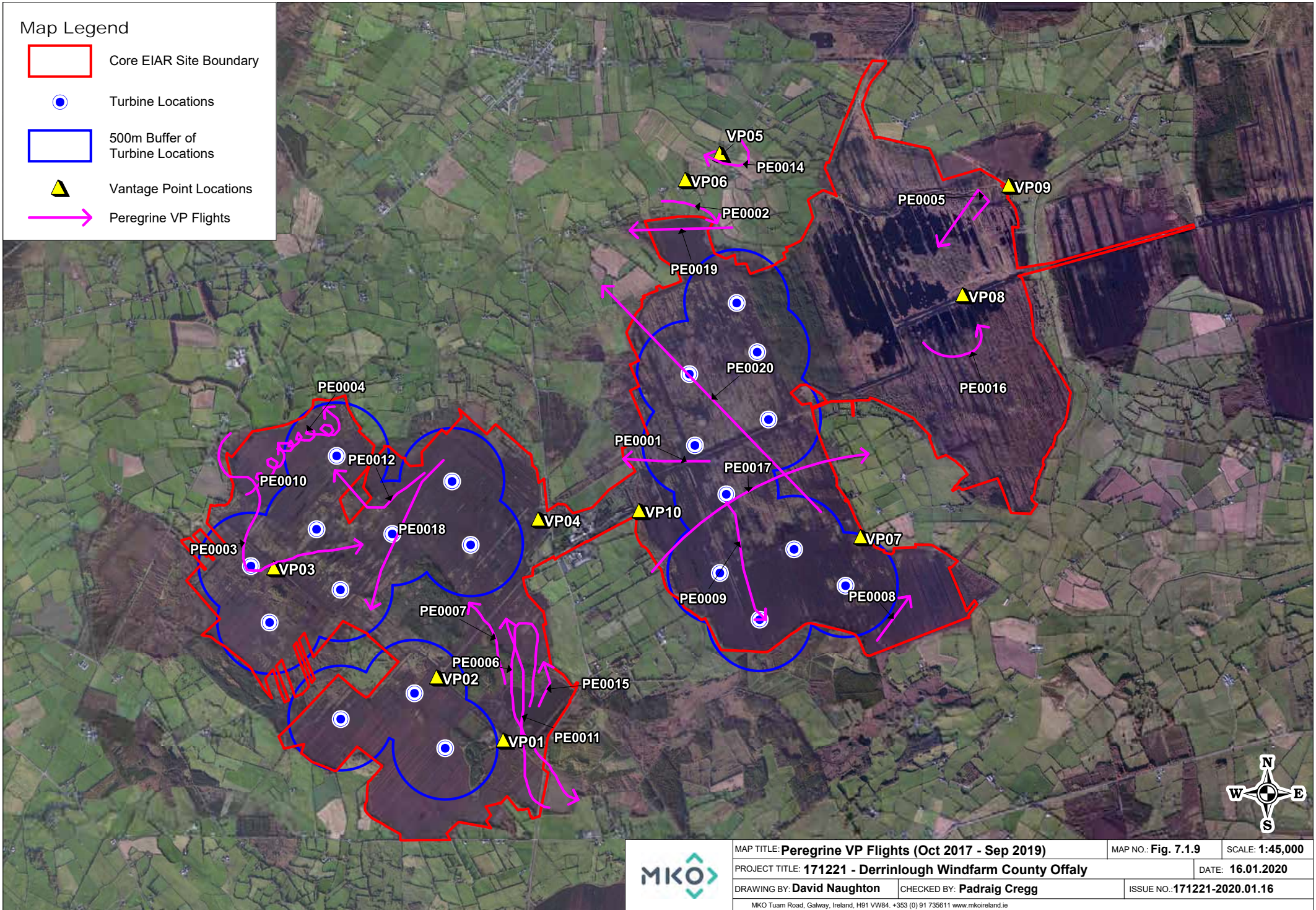
Migratory Bird Surveys												
Map Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-180m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
PE01	12/04/2019	CMVP6	Peregrine	1	19:35:00	28		28			WN7, (Bog woodland) PB4, (Cutover bog) Travelling	JK



Incidental Observations						
Date	Survey Type	Location	Species	No. of Birds	Notes	Surveyor
17/12/2018	HH Roost Survey	HHVP2	Peregrine	1		PM
22/10/2018	HH Roost Survey	HHVP 3	Peregrine	1	passing through	TR




Map Legend

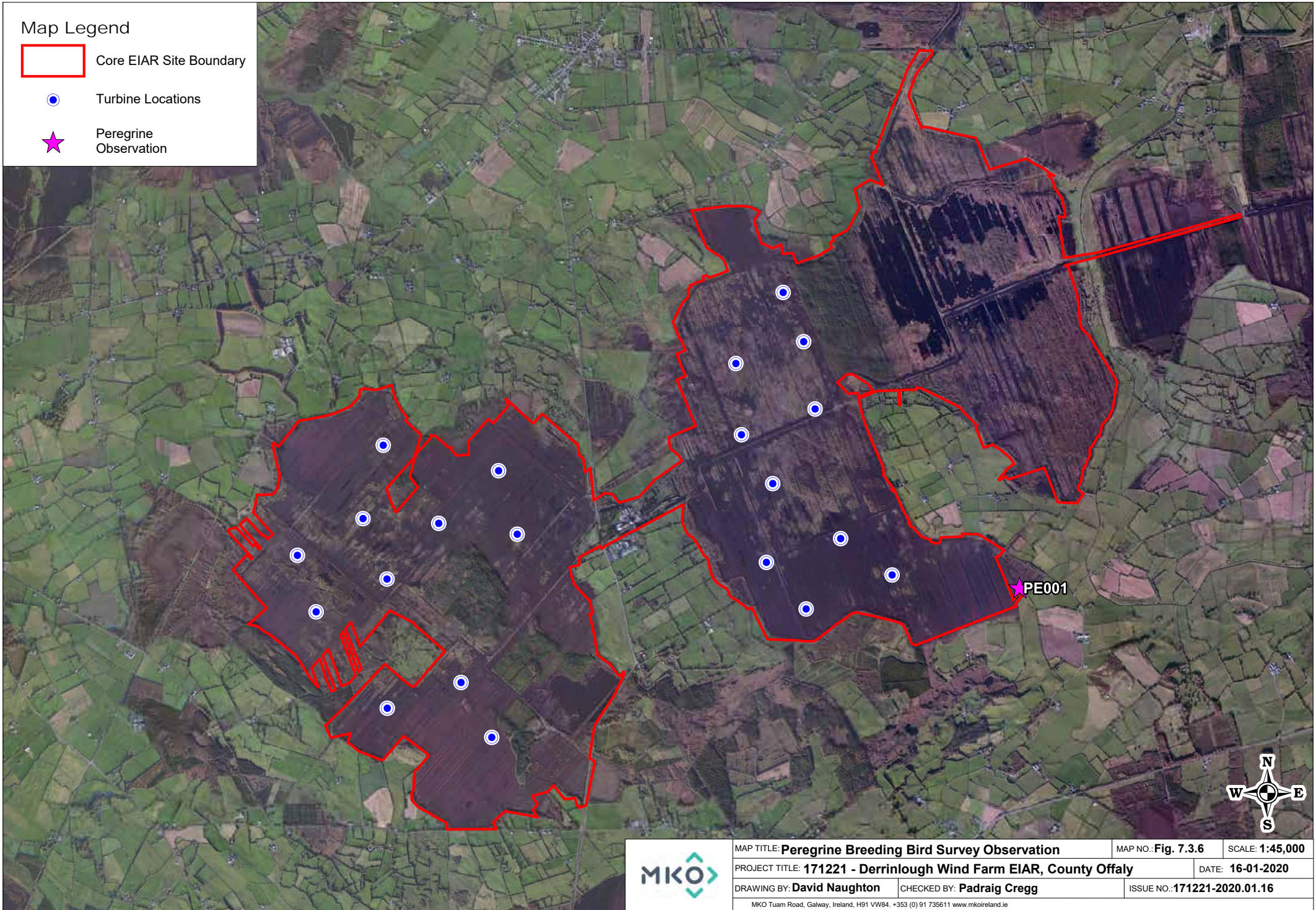
- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ Vantage Point Locations
- Peregrine VP Flights



	MAP TITLE: Peregrine VP Flights (Oct 2017 - Sep 2019)		MAP NO.: Fig. 7.1.9	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Windfarm County Offaly			DATE: 16.01.2020	
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.16
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Map Legend

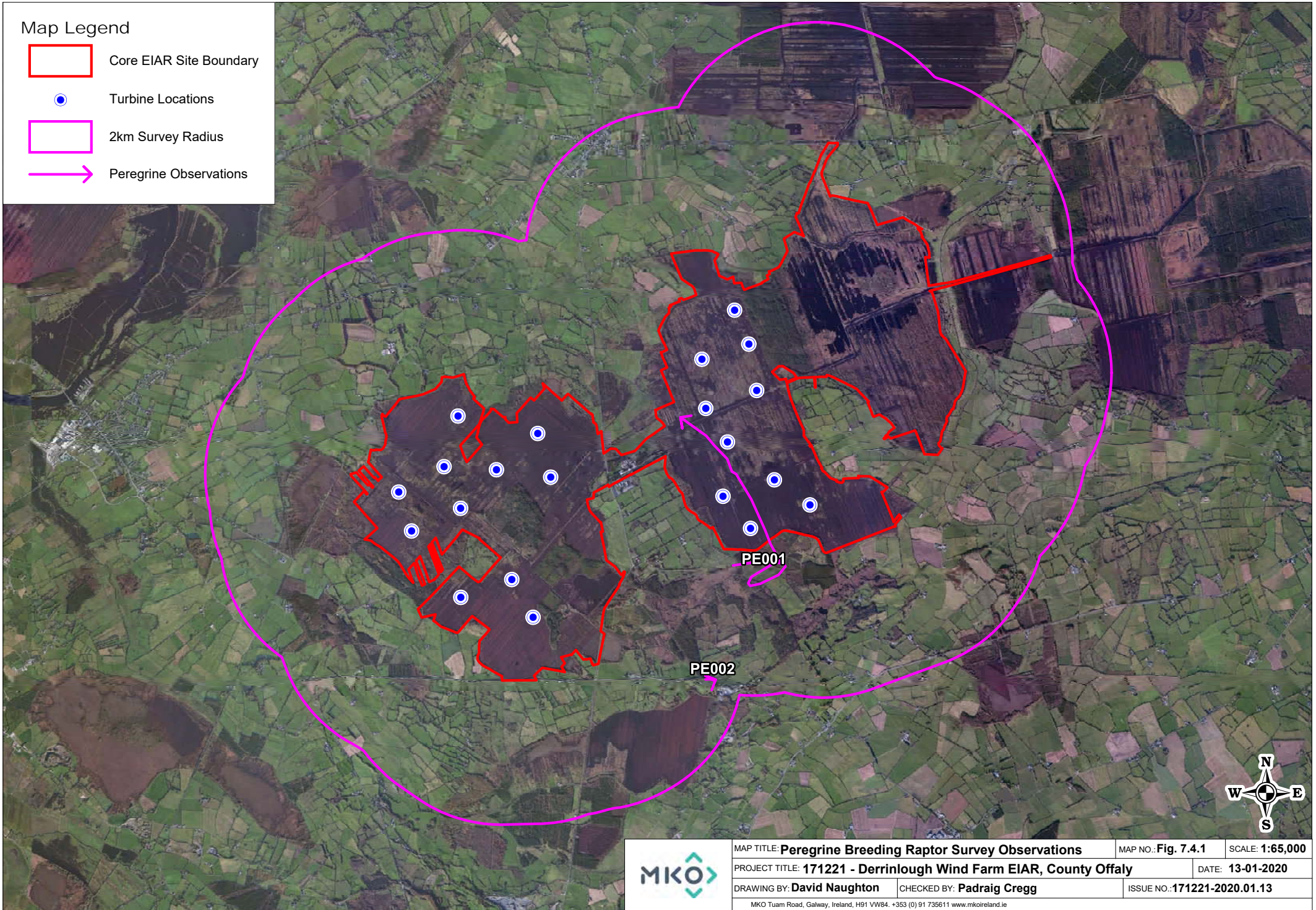
-  Core EIAR Site Boundary
-  Turbine Locations
-  Peregrine Observation








	MAP TITLE: Peregrine Breeding Bird Survey Observation	MAP NO.: Fig. 7.3.6	SCALE: 1:45,000
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly	DATE: 16-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16
	<small>MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie</small>		

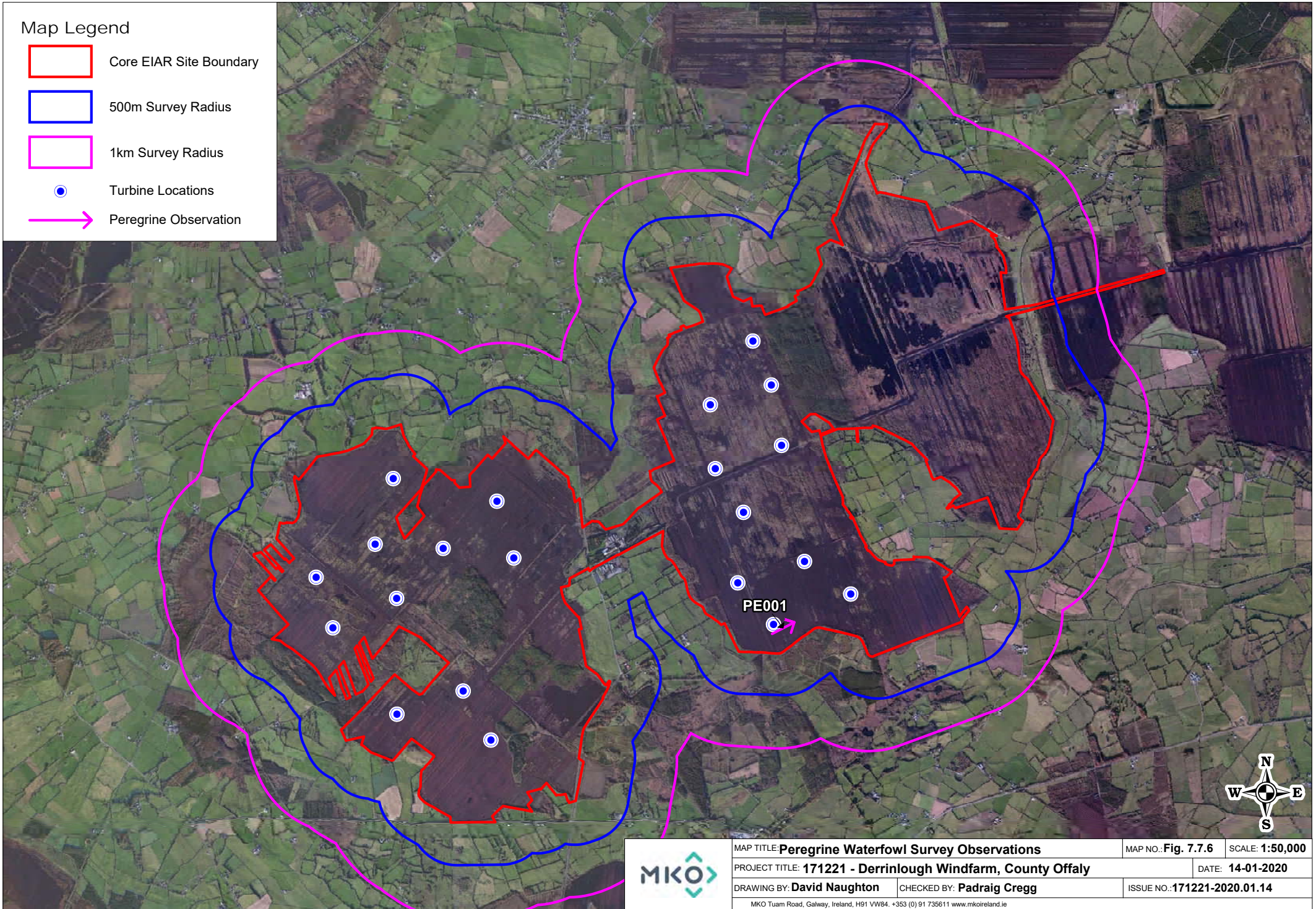
Map Legend

-  Core EIAR Site Boundary
-  Turbine Locations
-  2km Survey Radius
-  Peregrine Observations



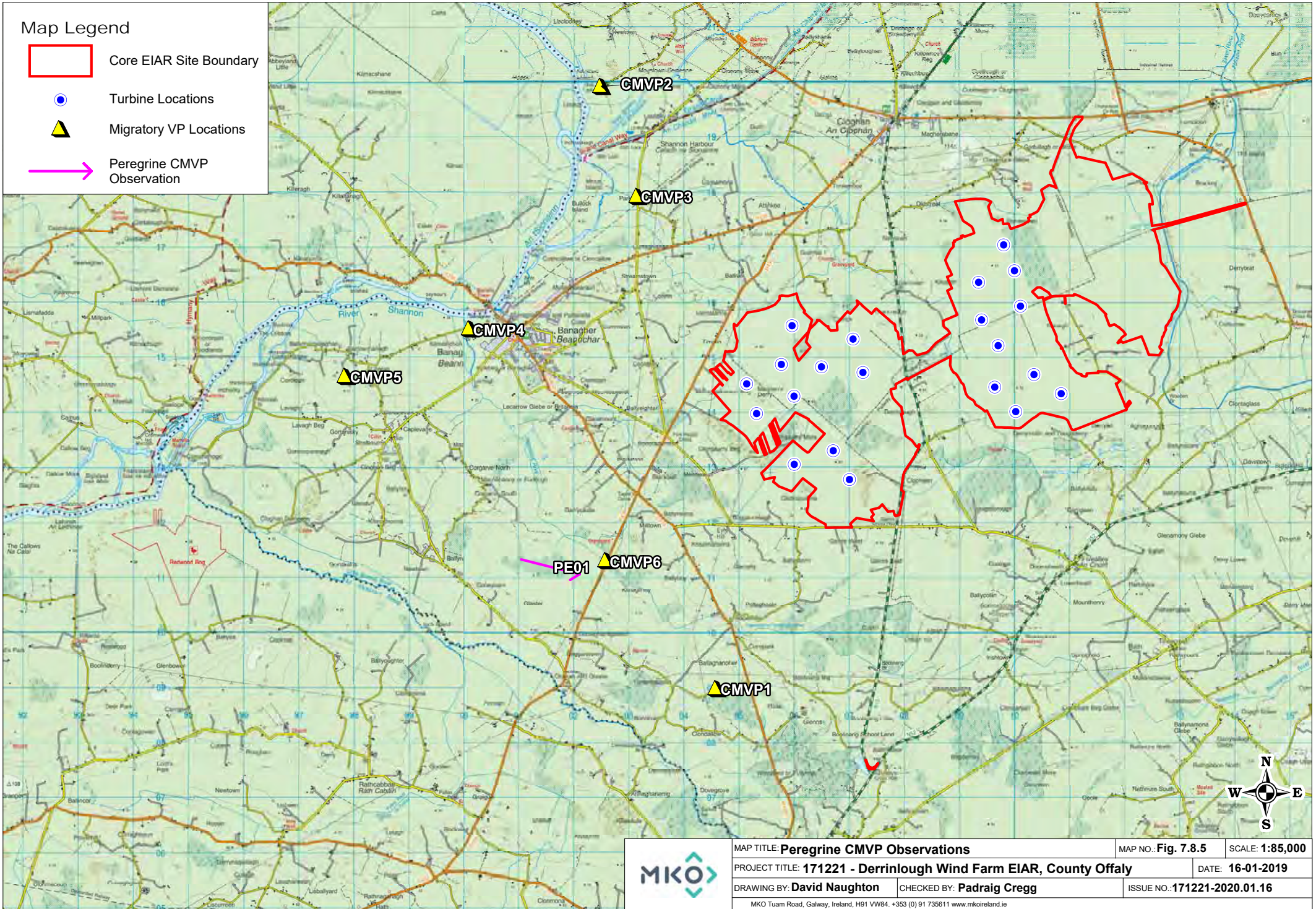
Map Legend

-  Core EIAR Site Boundary
-  500m Survey Radius
-  1km Survey Radius
-  Turbine Locations
-  Peregrine Observation



Map Legend

- Core EIAR Site Boundary
- Turbine Locations
- ▲ Migratory VP Locations
- Peregrine CMVP Observation



	MAP TITLE: Peregrine CMVP Observations		MAP NO.: Fig. 7.8.5	SCALE: 1:85,000
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly			DATE: 16-01-2019
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.16
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Table 10 Lapwing Survey Data

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
L0169	10/10/2017	5	Lapwing	105	10:55:00	100			100		Disturbed by a train from islands in east Drinagh west of tracks.	SON
L0170	20/10/2017	10	Lapwing	40	15:46:00	120			120		Flying	BM
L0171	23/10/2017	5	Lapwing	18	12:18:00	150			150		Flew off east Drinagh circled before flying W/SW	SON
L0172	07/11/2017	9	Lapwing	60	16:07:00	120	60	60			Got up and flew and down again	SON
L0173	14/11/2017	6	Lapwing	92	13:14:00	180			180		Flew off pond south end of east Drinagh circled landed again	SON
L0174	15/11/2017	5	Lapwing	65	08:18:00	180	90	90			Circling low over pond w of tracks.	SON
L0175	17/11/2017	4	Lapwing	160	16:00:00	90			90		Flew north along margin of site	JA
L0176	12/12/2017	5	Lapwing	8	12:08:00	60			60		Flew off N end of site flew W.	SON
L0177	13/12/2017	6	Lapwing	3	11:01:00	120			120		Circling to the SE of VP2	SON
L0179	08/01/2018	6	Lapwing	44	12:12:00	90			90		Flew off field N of site looked to land in field to N of where they took off from	SON
L0180	08/01/2018	7	Lapwing	1	08:00:00	15	15				Flew off bog flew S.	SON
L0181	09/01/2018	5	Lapwing	41	13:11:00	300	150	150			Flew from site circled and landed back in field they left earlier	SON
L0182	10/01/2018	5	Lapwing	22	08:17:00	60	30	30			Flying from NE of the pond west of the tracks to SW of the pond. Landed in SW.	SON
L0183	23/01/2018	10	Lapwing	28	11:44:00	90			90		Loose flock in NW direction	SON
L0184	26/01/2018	2	Lapwing	40	16:06:00	120	60	60			Flew low northwards	JA
L0185	09/02/2018	5	Lapwing	60	09:26:00	60	30	30			Flew off site to West landed north of conifer plantation.	SON

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
L0186	26/02/2018	10	Lapwing	80	17:42:00	320			320		Loose flock moving slowly north	BM
L0187	06/03/2018	5	Lapwing	60	15:42:00	180			180		Flew north out of site	SON
L0188	06/03/2018	6	Lapwing	8	12:43:00	90			90		Flying > 500 m north of site.	SON
L0189	06/03/2018	6	Lapwing	60	12:52:00	40			40		Flying N off site to the E approx. 500m off site.	SON
L0190	06/03/2018	6	Lapwing	27	13:14:00	120			120		Flew from SW through the site to the NE. They didn't stop on site.	SON
L0191	06/03/2018	6	Lapwing	90	14:02:00	180			180		Recorded flying over the site flying N.	SON
L0192	06/03/2018	6	Lapwing	63	14:11:00	240				240	Flying E along S edge of site. Turned NE over east Drinagh.	SON
L0193	06/03/2018	6	Lapwing	140	14:25:00	120			120		Flying E about 1km S of site.	SON
L0194	06/03/2018	6	Lapwing	206	15:18:00	180				180	Recorded flying from the S to the N over E. (may have come off field WS were feeding in earlier in season)	SON
L0195	15/03/2018	9	Lapwing	12	12:03:00	90			90		Flew east	SON
L0196	24/03/2018	7	Lapwing	3	14:37:00	900	450	450			Displaying over pond to W/NW.	SON
L0001	18/04/2018	8	Lapwing	1	11:05:00	93		93			PB4, (Cutover bog) WD4, (Conifer plantation) travelling	JH
L0003	30/04/2018	4	Lapwing	1	09:44:00	18	18				PB4, (Cutover bog) travelling	JH
L0005	30/04/2018	4	Lapwing	1	11:04:00	38		38			PB4, (Cutover bog) travelling	JH
L0004	30/04/2018	4	Lapwing	1	10:43:00	22	12	10			PB4, (Cutover bog) landing on heat over pb4	JH
L0002	30/04/2018	4	Lapwing	5	09:15:00	164	24	60	80		PB4, (Cutover bog) display flight	JH
L0014	17/05/2018	7	Lapwing	1	21:01:00	22	22				PB4, (Cutover bog) Landing on PB4	JH

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
L0013	17/05/2018	7	Lapwing	1	20:36:00	46	46				PB4, (Cutover bog) Displaying / landing on PB4	JH
L0007	17/05/2018	7	Lapwing	1	17:46:00	76	10	66			PB4, (Cutover bog) Displaying	JH
L0008	17/05/2018	7	Lapwing	2	18:05:00	180	20	160			PB4, (Cutover bog) Displaying	JH
L0009	17/05/2018	7	Lapwing	2	18:22:00	81	20	61			PB4, (Cutover bog) Displaying	JH
L0010	17/05/2018	7	Lapwing	1	18:40:00	112	30	82			PB4, (Cutover bog) Displaying	JH
L0011	17/05/2018	7	Lapwing	2	20:06:00	25	25				PB4, (Cutover bog) Displaying	JH
L0012	17/05/2018	7	Lapwing	4	20:21:00	223	60	163			PB4, (Cutover bog) Displaying	JH
L0006	17/05/2018	7	Lapwing	1	17:39:00	84	14	70			PB4, (Cutover bog) Display Flight - Landing on PB4	JH
L0025	25/05/2018	1	Lapwing	1	08:21:00	55	30	25			PB4, (Cutover bog) display flight	P.Troake
L0015	25/05/2018	1	Lapwing	1	09:09:00	45	15	30			PB4, (Cutover bog) display flight	P.Troake
L0026	25/05/2018	1	Lapwing	1	08:53:00	90	30	60			PB4, (Cutover bog) display flight	P.Troake
L0016	30/05/2018	10	Lapwing	1	19:53:00	65	10	55			PB4, (Cutover bog) Landing on PB4	JH
L0024	31/05/2018	4	Lapwing	1	20:21:00	74		74			PB4, (Cutover bog) Mobbing HC	JH
L0020	31/05/2018	4	Lapwing	1	17:40:00	105	35	70			PB4, (Cutover bog) WD4, (Conifer plantation) Mobbing Buzzard	JH
L0023	31/05/2018	4	Lapwing	1	19:11:00	36			36		PB4, (Cutover bog) WD4, (Conifer plantation) Mobbing Buzzard	JH
L0018	31/05/2018	4	Lapwing	1	17:15:00	22	22				PB4, (Cutover bog) Landing on wet area of PB4	JH
L0017	31/05/2018	4	Lapwing	1	16:59:00	69	69				PB4, (Cutover bog) Landing on PB4	JH
L0021	31/05/2018	4	Lapwing	2	17:47:00	84	24	60			PB4, (Cutover bog) Landing on PB4	JH
L0022	31/05/2018	4	Lapwing	1	18:02:00	38	30				PB4, (Cutover bog) Landing on PB4	JH

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
L0019	31/05/2018	4	Lapwing	6	17:20:00	26	26				PB4, (Cutover bog) Disturbed from wet area by machine workers - landing back on PB4	JH
L0027	11/06/2018	7	Lapwing	1	11:20:00	26	26				PB4, (Cutover bog) Fending off Ravens	JH
L0028	18/06/2018	8	Lapwing	1	14:34:00	50		50			PB4, (Cutover bog) Travelling	JH
L0029	20/06/2018	10	Lapwing	1	09:14:00	50	50				PB4, (Cutover bog) Flying and landing on PB4	JH
L0031	12/07/2018	9	Lapwing	1	14:34:00	27	27				PB4, (Cutover bog) Landing on wet area of PB4	JH
L0030	12/07/2018	9	Lapwing	2	09:46:00	55	55				PB4, (Cutover bog) Landing on Flooded area of PB4	JH
L0032	12/07/2018	9	Lapwing	2	14:51:00	88	88				PB4, (Cutover bog) Flying, Calling and landing on wet area of PB4	JH
L0033	13/07/2018	10	Lapwing	2	10:17:00	107		30	77		PB4, (Cutover bog) Travelling	JH
L0034	13/07/2018	10	Lapwing	1	11:18:00	70			70		PB4, (Cutover bog) Travelling	JH
L0035	16/07/2018	1	Lapwing	12	09:50:00	262		36	120	106	PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
L0038	24/07/2018	8	Lapwing	1	10:15:00	38		38			PB4, (Cutover bog) Travelling	JH
L0039	24/07/2018	8	Lapwing	1	11:18:00	64	64				PB4, (Cutover bog) Landing on wet area of PB4	JH
L0040	24/07/2018	8	Lapwing	1	15:11:00	42	42				PB4, (Cutover bog) Landing on wet area of PB4	JH
L0036	24/07/2018	8	Lapwing	1	09:06:00	57	57				PB4, (Cutover bog) Flying, Calling and landing on wet area of PB4	JH
L0037	24/07/2018	8	Lapwing	2	09:39:00	326	326				PB4, (Cutover bog) Flying, Calling and landing on wet area of PB4	JH
L0041	01/08/2018	1	Lapwing	8	11:31:00	62		62			PB4, (Cutover bog) Travelling	JH

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
L0042	28/09/2018	10	Lapwing	2	10:50:00	114	20	94			PB4, (Cutover bog) Landing on PB4	JH
L0043	04/10/2018	1	Lapwing	10	15:39:00	46	10	36			PB4, (Cutover bog) WD4, (Conifer plantation) Travelling	JH
L0045	10/10/2018	5	Lapwing	50	14:05:00	100		100			PB4, (Cutover bog) travelling and landing	TR
L0044	10/10/2018	5	Lapwing	20	13:40:00	150	30	60	60		PB4, (Cutover bog) travelling	TR
L0047	10/10/2018	5	Lapwing	10	17:18:00	120		120			PB4, (Cutover bog) travelling	TR
L0046	10/10/2018	5	Lapwing	50	16:05:00	90	5	70	15		PB4, (Cutover bog) rising from wetland area	TR
L0048	11/10/2018	6	Lapwing	40	13:30:00	300	30	180	90		GA1, (Improved agricultural grassland)	TR
L0049	11/10/2018	6	Lapwing	30	15:10:00	120		120			GA1, (Improved agricultural grassland)	TR
L0050	11/10/2018	6	Lapwing	35	15:35:00	150	30	120			GA1, (Improved agricultural grassland) PB4, (Cutover bog)	TR
L0051	11/10/2018	6	Lapwing	70	15:50:00	180	30	120	30		GA1, (Improved agricultural grassland) PB4, (Cutover bog)	TR
L0052	11/10/2018	6	Lapwing	70	17:10:00	35	70				GA1, (Improved agricultural grassland)	TR
L0053	11/10/2018	6	Lapwing	70	17:15:00	220	60	100	60		GA1, (Improved agricultural grassland)	TR
L0055	16/10/2018	3	Lapwing	2	13:51:00	81			81	0	PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
L0054	16/10/2018	8	Lapwing	12	15:05:00	300		300			PB4, (Cutover bog) WD4, (Conifer plantation) circling area, landing in wetland	TR
L0056	17/10/2018	9	Lapwing	25	17:30:00	30		15	15		PB4, (Cutover bog) travelling	TR
L0057	18/10/2018	10	Lapwing	11	16:45:00	50		50			PB4, (Cutover bog) travelling	TR
L0058	18/10/2018	10	Lapwing	11	16:55:00	20	20				PB4, (Cutover bog) landing on bog	TR
L0060	06/11/2018	1	Lapwing	5	10:22:00	105		105			PB4, (Cutover bog) FL1, (Dystrophic lakes) Travelling	JH

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
L0059	06/11/2018	1	Lapwing	24	08:29:00	180	20	60	100		PB4, (Cutover bog) FL1, (Dystrophic lakes) Landing on Flooded area of PB4	JH
L0061	06/11/2018	1	Lapwing	10	12:25:00	74	74				PB4, (Cutover bog) FL1, (Dystrophic lakes) Landing on Flooded area of PB4	JH
L0065	07/11/2018	5	Lapwing	40	10:25:00	200		200			PB4, (Cutover bog) travelling	TR
L0062	07/11/2018	5	Lapwing	2	09:35:00	30	30				GA1, (Improved agricultural grassland) travelling	TR
L0064	07/11/2018	5	Lapwing	4	10:15:00	40	40				GA1, (Improved agricultural grassland) PB4, (Cutover bog) travelling	TR
L0067	07/11/2018	5	Lapwing	11	11:15:00	170		170			GA1, (Improved agricultural grassland) PB4, (Cutover bog) travelling	TR
L0069	07/11/2018	5	Lapwing	7	11:35:00	30			30		GA1, (Improved agricultural grassland) travelling	TR
L0063	07/11/2018	5	Lapwing	40	09:45:00	37	37				PB4, (Cutover bog) circling wetland before landing above water	TR
L0066	07/11/2018	5	Lapwing	18	10:40:00	100	100				GA1, (Improved agricultural grassland) PB4, (Cutover bog) circling and landing above water	TR
L0068	07/11/2018	5	Lapwing	15	11:20:00	120				120	PB4, (Cutover bog)	TR
L0070	07/11/2018	6	Lapwing	4	12:50:00	15	15				GA1, (Improved agricultural grassland)	TR
L0071	07/11/2018	6	Lapwing	40	13:00:00	90		90			GA1, (Improved agricultural grassland)	TR
L0072	15/11/2018	9	Lapwing	10	12:05:00	130		130			PB4, (Cutover bog) travelling	TR
L0073	16/11/2018	2	Lapwing	24	11:24:00	187			187		PB4, (Cutover bog) WD4, (Conifer plantation) GA1, (Improved agricultural grassland) Travelling	JH
L0075	20/11/2018	6	Lapwing	22	08:15:00	120			120		PB4, (Cutover bog) travelling	TR

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
L0076	20/11/2018	6	Lapwing	20	08:30:00	60		60			PB4, (Cutover bog) travelling	TR
L0074	20/11/2018	6	Lapwing	20	07:45:00	5	5				GA1, (Improved agricultural grassland)	TR
L0077	23/11/2018	5	Lapwing	1	09:10:00	15	15				GA1, (Improved agricultural grassland)	TR
L0078	23/11/2018	5	Lapwing	2	09:20:00	20	20				GA1, (Improved agricultural grassland)	TR
L0079	30/11/2018	8	Lapwing	40	09:26:00	180		60	120		PB4, (Cutover bog)	TR
L0080	30/11/2018	8	Lapwing	100	12:50:00	150		50	450		PB4, (Cutover bog)	TR
L0081	04/12/2018	1	Lapwing	8	09:10:00	200		30	170		PB4, (Cutover bog) travelling	TR
L0082	04/12/2018	1	Lapwing	1	12:30:00	45		45			PB4, (Cutover bog) hunting before travelling on	TR
L0085	04/12/2018	5	Lapwing	1	12:29:00	71	10	61			PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) GA1, (Improved agricultural grassland) Travelling	JH
L0083	04/12/2018	5	Lapwing	14	09:48:00	214	30	184			GA1, (Improved agricultural grassland) Landing in GA1	JH
L0084	04/12/2018	5	Lapwing	10	12:09:00	97	10	21	66		GA1, (Improved agricultural grassland) Circling and landing in GA1	JH
L0087	14/02/2019	1	Lapwing	7	17:41:00	42	10	32			FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Landing on FL2	JH
L0086	14/02/2019	1	Lapwing	17	17:19:00	524	64	320	140		FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Circling flooded area and landing	JH
L0088	07/03/2019	4	Lapwing	1	09:50:00	59	10	10	39		PB4, (Cutover bog) Travelling	JH
L0090	23/04/2019	4	Lapwing	1	15:45:35	70		70			PB4, (Cutover bog) Travelling	JH
L0095	23/04/2019	4	Lapwing	3	17:54:52	64		64			PB4, (Cutover bog) Travelling	JH
L0097	23/04/2019	4	Lapwing	1	19:08:13	44		44			PB4, (Cutover bog) Travelling	JH
L0098	23/04/2019	4	Lapwing	2	19:14:38	62		62			PB4, (Cutover bog) Travelling	JH

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
L0099	23/04/2019	4	Lapwing	1	19:47:12	35		35			PB, (Bogs) Travelling	JH
L0091	23/04/2019	4	Lapwing	1	16:40:49	36		36			PB4, (Cutover bog) Travelling	JH
L0092	23/04/2019	4	Lapwing	2	16:59:01	50		50			PB4, (Cutover bog) Landing on PB4	JH
L0093	23/04/2019	4	Lapwing	1	17:14:59	54		54			PB4, (Cutover bog) Landing on PB4	JH
L0094	23/04/2019	4	Lapwing	1	17:46:17	39		39			PB4, (Cutover bog) Landing on PB4	JH
L0096	23/04/2019	4	Lapwing	1	18:12:04	66		66			PB4, (Cutover bog) Landing on PB4	JH
L0100	23/04/2019	4	Lapwing	2	19:57:22	77		77			PB4, (Cutover bog) Flying/ Displaying	JH
L0101	23/04/2019	4	Lapwing	2	20:16:00	42		42			PB4, (Cutover bog) Displaying	JH
L0089	23/04/2019	4	Lapwing	1	15:00:00	110		110			PB4, (Cutover bog) Circling and landing on PB4	JH
L0102	09/05/2019	1	Lapwing	1	09:30:00	70		50			PB4, (Cutover bog) travelling, disturbing two lapwing on ground	TR
L0103	09/05/2019	1	Lapwing	2	09:31:00	30		15			PB4, (Cutover bog) rising from possible nest area, diving and returning to ground	TR
L0104	09/05/2019	1	Lapwing	1	09:34:00	20		10			PB4, (Cutover bog) landing beside wetland male	TR
L0153	09/05/2019	9	Lapwing	2	07:15:00	47		47			WN7, (Bog woodland) Travelling	JK
L0154	09/05/2019	9	Lapwing	1	10:55:00	46		46			WN7, (Bog woodland) Travelling	JK
L0105	10/05/2019	2	Lapwing	1	10:15:00	45		35			PB4, (Cutover bog) travelling before landing on bog	TR
L0106	10/05/2019	2	Lapwing	1	10:27:00	70		70			PB4, (Cutover bog) rising from bog travelling on	TR
L0155	10/05/2019	8	Lapwing	3	06:50:00	52		52			WN7, (Bog woodland) Travelling	JK
L0156	10/05/2019	8	Lapwing	5	07:20:00	48		48			WN7, (Bog woodland) Travelling	JK

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
L0157	10/05/2019	8	Lapwing	2	09:42:00	33		33			WN7, (Bog woodland) Travelling	JK
L0158	10/05/2019	8	Lapwing	1	10:47:00	36		36			WN7, (Bog woodland) Travelling	JK
L0114	16/05/2019	3	Lapwing	1	10:45:17	20		20			PB4, (Cutover bog) travelling	TR
L0107	16/05/2019	3	Lapwing	1	06:16:49	5					PB4, (Cutover bog) landing on bog	TR
L0113	16/05/2019	3	Lapwing	1	10:14:50	200		150	50		PB4, (Cutover bog) before travelling on	TR
L0111	16/05/2019	3	Lapwing	1	10:00:00	20		5	10		PB4, (Cutover bog) before landing	TR
L0109	16/05/2019	3	Lapwing	1	07:07:27	45		10			PB4, (Cutover bog) circling low over area	TR
L0112	16/05/2019	3	Lapwing	2	10:12:57	90		68	30		PB4, (Cutover bog) circling area travelling on	TR
L0108	16/05/2019	3	Lapwing	1	06:39:47	70		70			PB4, (Cutover bog) circling area	TR
L0110	16/05/2019	3	Lapwing	1	07:23:40	30		30			PB4, (Cutover bog)	TR
L0132	21/05/2019	4	Lapwing	1	09:34:13	20		20			PB4, (Cutover bog) travelling calling	TR
L0118	21/05/2019	4	Lapwing	2	06:31:42	60		60			PB4, (Cutover bog) travelling	TR
L0119	21/05/2019	4	Lapwing	1	06:32:53	60		60			PB4, (Cutover bog) travelling	TR
L0123	21/05/2019	4	Lapwing	2	07:14:05	100		100			PB4, (Cutover bog) travelling	TR
L0133	21/05/2019	4	Lapwing	1	09:41:57	15					PB4, (Cutover bog) travelling	TR
L0129	21/05/2019	4	Lapwing	2	09:03:37	25					PB4, (Cutover bog) rising from bog to chase RP	TR
L0116	21/05/2019	4	Lapwing	1	05:52:53	10					PB4, (Cutover bog) rising and landing	TR
L0134	21/05/2019	4	Lapwing	1	10:00:59	520		200			PB4, (Cutover bog) mobbing HC, female on ground	TR
L0125	21/05/2019	4	Lapwing	1	08:14:39	150		120			PB4, (Cutover bog) mobbing hc	TR

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
L0121	21/05/2019	4	Lapwing	4	07:01:02	45		30			PB4, (Cutover bog) landing on bog, feeding	TR
L0120	21/05/2019	4	Lapwing	1	06:46:03	5					PB4, (Cutover bog) landing AW	TR
L0115	21/05/2019	4	Lapwing	1	05:51:29	10					PB4, (Cutover bog) landing	TR
L0127	21/05/2019	4	Lapwing	1	08:28:43	40					PB4, (Cutover bog) landing	TR
L0135	21/05/2019	4	Lapwing	2	10:10:40	60		15	20		PB4, (Cutover bog) landing	TR
L0137	21/05/2019	4	Lapwing	1	10:37:15	15					PB4, (Cutover bog) landing	TR
L0117	21/05/2019	4	Lapwing	6	06:30:18	150		75			PB4, (Cutover bog) interacting and calling	TR
L0126	21/05/2019	4	Lapwing	2	08:19:03	30		15			PB4, (Cutover bog) display landing	TR
L0131	21/05/2019	4	Lapwing	2	09:32:23	210		210			PB4, (Cutover bog) circling calling	TR
L0128	21/05/2019	4	Lapwing	3	08:42:33	320		150	60		PB4, (Cutover bog) circling area calling	TR
L0136	21/05/2019	4	Lapwing	4	10:21:15	270		60	210		PB4, (Cutover bog) circling area	TR
L0122	21/05/2019	4	Lapwing	1	07:06:43	20					PB4, (Cutover bog) chasing 2 RP	TR
L0124	21/05/2019	4	Lapwing	2	07:15:51	180		100			PB4, (Cutover bog) calling and landing	TR
L0130	21/05/2019	4	Lapwing	1	09:11:32	25					PB4, (Cutover bog) calling and going down	TR
L0159	24/05/2019	10	Lapwing	3	08:55:00	31		31			PB4, (Cutover bog) WN7, (Bog woodland)	JK
L0160	24/05/2019	10	Lapwing	2	10:20:00	62		62			PB4, (Cutover bog) WN7, (Bog woodland)	JK
L0161	24/05/2019	10	Lapwing	1	10:25:00	54		54			PB4, (Cutover bog) WN7, (Bog woodland)	JK
L0162	24/05/2019	10	Lapwing	4	10:32:00	47			47		PB4, (Cutover bog) WN7, (Bog woodland)	JK

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
L0163	03/06/2019	4	Lapwing	4	07:12:00	33		33			WN7, (Bog woodland) PB4, (Cutover bog) Travelling	JK
L0164	03/06/2019	4	Lapwing	2	07:34:00	28		28			WN7, (Bog woodland) PB4, (Cutover bog) Displaying	JK
L0165	03/06/2019	4	Lapwing	1	07:50:00	46		46			WN7, (Bog woodland) PB4, (Cutover bog) Displaying	JK
L0166	03/06/2019	4	Lapwing	5	09:42:00	37		37			WN7, (Bog woodland) PB4, (Cutover bog) Displaying	JK
L0140	06/06/2019	1	Lapwing	1	10:14:03	129			129		FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
L0141	06/06/2019	1	Lapwing	1	10:21:19	52		52			FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Landing on PB4	JH
L0139	06/06/2019	1	Lapwing	1	09:37:35	32		32			FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Landing at edge of flooded area.	JH
L0142	06/06/2019	1	Lapwing	1	12:40:57	72		72			FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Circling and landing at edge of FL2	JH
L0138	06/06/2019	1	Lapwing	1	08:49:56	70		70			FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) GA1, (Improved agricultural grassland)	JH
L0167	10/06/2019	9	Lapwing	4	12:32:00	48		48			WN7, (Bog woodland) PB4, (Cutover bog) Travelling	JK
L0168	10/06/2019	9	Lapwing	6	13:38:00	35		35			WN7, (Bog woodland) PB4, (Cutover bog) Travelling	JK
L0143	02/07/2019	6	Lapwing	8	10:42:08	110			110		PB4, (Cutover bog) WD4, (Conifer plantation) Travelling	JH
L0144	10/07/2019	9	Lapwing	50	11:44:37	94		20	74		PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Travelling	JH

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
L0145	10/07/2019	9	Lapwing	8	12:09:24	42		42			PB4, (Cutover bog) Travelling	JH
L0147	16/07/2019	8	Lapwing	1	11:17:34	35		35			PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Moving location on flooded area	JH
L0146	16/07/2019	8	Lapwing	1	10:33:04	55		55			PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Landing on flooded area	JH
L0148	16/07/2019	8	Lapwing	27	14:11:59	46		46			PB4, (Cutover bog) WD4, (Conifer plantation) Landing on flooded area	JH
L0152	01/08/2019	1	Lapwing	1	13:04:07	5					PB2, (Upland blanket bog) low flight	TR
L0151	01/08/2019	1	Lapwing	19	12:20:14	60		50			PB2, (Upland blanket bog) alarming and rising from wetland	TR
L0149	07/08/2019	8	Lapwing	7	17:04:43	55			55		PB4, (Cutover bog) Travelling	JH
L0150	09/08/2019	9	Lapwing	12	21:39:13	42		42			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH

Vantage Point Non-Flight Observations							
Map Ref. No.	Date	VP	Species	No. of Birds	Time	Comments	Surveyor
N/A	14/11/2017	5	Lapwing	29	15:00:00	Roosting on island on pond W of tracks	SON
L0178	18/12/2017	4	Lapwing	20	09:55:00	Resting on bare peat	BM
N/A	06/03/2018	6	Lapwing	22	15:13:00	Perched. Feeding in field to the SE of VP	SON
N/A	04/10/2018	1	Lapwing	40		Seen roosting in an area of cutover bog close to the road	JH
N/A	16/04/2019	3	Lapwing	1		Heard calling on numerous occasions from area of bare peat throughout survey but not seen.	JH
N/A	01/08/2019	1	Lapwing	10	12:00:00	PB4, (Cutover bog) perched AW. North of VP1	TR

Breeding Bird Survey							
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity	Comments	Surveyor
L001	03/04/2018		Lapwing	1	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Flying and calling over Drinagh Wetland		JH
L002	03/04/2018		Lapwing	3	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Flying and Calling		JH
L003	06/04/2018		Lapwing	3	PB4, (Cutover bog) Roosting on PB4	Disturbed by Observer	JH
L004	09/04/2018		Lapwing	2	PB4, (Cutover bog) Flying and Calling		JH
L005	16/04/2018		Lapwing	1	PB4, (Cutover bog) Flying and landing on PB4.	Area with suitable nesting habitat	JH
L006	16/04/2018		Lapwing	1	PB4, (Cutover bog) Travelling		JH
L007	16/04/2018		Lapwing	2	PB4, (Cutover bog) Landing on PB4		JH
L008	17/04/2018		Lapwing	1	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Roosting on the cutaway		JH
L009	17/04/2018		Lapwing	1	PB4, (Cutover bog) Flying and landing on wet area of the cutaway bog		JH
L010	17/04/2018		Lapwing	2	PB4, (Cutover bog) Roosting	Roosting on the cutaway bog	JH
L011	17/04/2018		Lapwing	2	PB4, (Cutover bog) Roosting	Roosting on the cutaway bog. Disturbed by observer.	JH
L012	01/05/2018		Lapwing	2	PB4, (Cutover bog) Flying and Calling - mobbing Hooded Crow in the area	Possible breeding pair	JH
L013	02/05/2018		Lapwing	4	PB4, (Cutover bog) Roosting	Disturbed by observer from cutaway - suitable nesting habitat - possible 2 breeding pairs	JH
L014	04/05/2018		Lapwing	1	PB4, (Cutover bog) Travelling	In height band 2 for 22 seconds - flying east in direction	JH
L015	04/05/2018		Lapwing	3	PB4, (Cutover bog) Disturbed by observer - Landing on the cutaway bog	Pair remained in the area - suitable nesting habitat	JH
L016	04/05/2018		Lapwing	1	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Travelling	Flushed from wet area of PB4	JH

Breeding Bird Survey								
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity		Comments	Surveyor
L017	04/05/2018		Lapwing	1	PB4, (Cutover bog)	Displaying/Calling		JH
L018	04/05/2018		Lapwing	2	PB4, (Cutover bog)	Travelling	Leaving the area where other lapwing was calling/displaying	JH
L019	04/05/2018		Lapwing	2	PB4, (Cutover bog)	Flying and landing on PB4	Landing on PB4	JH
L020	11/05/2018		Lapwing	1	PB4, (Cutover bog)	FW4, (Drainage ditches) Flying and calling	Disturbed by observer - landing on wet area PB4	JH
L021	11/05/2018		Lapwing	1	PB4, (Cutover bog)	FW4, (Drainage ditches) Flying and Calling	Disturbed by observer - landing on wet area of PB4	JH
L022	11/05/2018		Lapwing	2	PB4, (Cutover bog)	FW4, (Drainage ditches) Flying and Calling	Disturbed by observer - landing on PB4	JH
L023	11/05/2018		Lapwing	2	PB4, (Cutover bog)	FW4, (Drainage ditches) Flying and Calling - Displaying	In same area as previous pair - 2 pairs flying and calling - Displaying	JH
L024	11/05/2018		Lapwing	1	PB4, (Cutover bog)	FW4, (Drainage ditches) Travelling	Heading east in direction	JH
L025	18/05/2018		Lapwing	1	PB4, (Cutover bog)	WD4, (Conifer plantation) Flying and calling	In height band 2 for 90 seconds	JH
L026	18/05/2018		Lapwing	1	PB4, (Cutover bog)	Flying and Calling and landing on PB4	Pair present in the area - further investigation located at 1 two chicks calling to parent birds.	JH
L027	18/05/2018		Lapwing	2	PB4, (Cutover bog)	Flying and Calling	In height band 2 for 86 seconds	JH
L028	18/05/2018		Lapwing	2	PB4, (Cutover bog)	Flying and Calling	Two pairs present in the area	JH
L029	22/05/2018		Lapwing	1	PB4, (Cutover bog)	Travelling	In height band 2 for 55 seconds - heading west in direction	JH
L030	22/05/2018		Lapwing	2	PB4, (Cutover bog)	Displaying	Displaying	JH
L031	22/05/2018		Lapwing	1	PB4, (Cutover bog)	FL2, (Acid oligotrophic lakes) Flying and Calling	Flying and calling over Drinagh Wetland	JH
L032	22/05/2018		Lapwing	3	PB4, (Cutover bog)	GA1, (Improved agricultural grassland) Breeding Pair in the area	Parent birds with at least 1 chick in area of grassland	JH

Breeding Bird Survey							
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity	Comments	Surveyor
L033	24/05/2018		Lapwing	2	PB4, (Cutover bog) Flying and Calling - Displaying	On wet area of PB4 - Suitable nesting and chick rearing habitat	JH
L034	06/06/2018	05:35:00	Lapwing	2	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Roosting on sand spit on wet area of PB4		JH
L035	07/06/2018	05:40:00	Lapwing	1	PB4, (Cutover bog) Flying and landing on bog		JH
L036	07/06/2018	06:05:00	Lapwing	1	PB4, (Cutover bog) Travelling over bog in flight		JH
L037	07/06/2018	06:17:00	Lapwing	2	PB4, (Cutover bog) Flying and landing on bog. Pair present. Possibly lost nest due to peat harvesting in area	Breeding Territory	JH
L038	07/06/2018	06:54:00	Lapwing	2	PB4, (Cutover bog) Disturbed by observer from flooded area of PB4		JH
L039	07/06/2018	09:33:00	Lapwing	1	Travelling		JH
L040	08/06/2018	05:54:00	Lapwing	2	Flying and Calling		JH
L041	08/06/2018	06:01:00	Lapwing	1	Travelling		JH
L042	08/06/2018	06:08:00	Lapwing	2	Flying and calling	Breeding Territory	JH
L043	08/06/2018	06:10:00	Lapwing	4	Flying and calling. Two pairs present	Breeding Territory	JH
L044	12/06/2018	09:47:00	Lapwing	1	Flying and calling		JH
L045	15/06/2018	05:26:00	Lapwing	1	Flying and calling		JH
L046	15/06/2018	05:56:00	Lapwing	2	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Pair with one chick on wet area	Breeding Territory	JH
L047	15/06/2018	05:57:00	Lapwing	2	Flying and calling		JH
L048	15/06/2018	06:24:00	Lapwing	1	Flying and calling		JH
L049	15/06/2018	07:54:00	Lapwing	4	Pair present with 2 chicks. In total eleven lapwing in area. Possibly 3 pairs	Multiple Breeding Territories	JH
L050	19/06/2018	05:57:00	Lapwing	1	Flying and calling		JH

Breeding Bird Survey							
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity	Comments	Surveyor
L051	19/06/2018	07:12:00	Lapwing	1	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) On flooded area		JH
L052	19/06/2018	08:37:00	Lapwing	2	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Disturbed by surveyor from wet area		JH
L053	03/04/2019	07:35:56	Lapwing	3	PB4, (Cutover bog) Flying and Calling		JH
L054	03/04/2019	08:02:18	Lapwing	2	PB4, (Cutover bog) Flying and calling		JH
L055	08/04/2019	07:32:05	Lapwing	1	PB4, (Cutover bog) Flushed by observer		JH
L056	08/04/2019	07:48:46	Lapwing	3	PB4, (Cutover bog) Flushed by observer		JH
L057	08/04/2019	11:04:24	Lapwing	3	PB4, (Cutover bog) Roosting on PB4		JH
L058	09/04/2019	09:31:16	Lapwing	1	PB4, (Cutover bog) Landing on PB4		JH
L059	10/04/2019	06:13:20	Lapwing	1	PB4, (Cutover bog) Calling from wet area of pb4		JH
L060	10/04/2019	06:43:59	Lapwing	7	PB4, (Cutover bog) Flying and Calling		JH
L061	17/04/2019	06:17:50	Lapwing	1	PB4, (Cutover bog) Flying and Calling		JH
L062	17/04/2019	07:03:04	Lapwing	1	PB4, (Cutover bog) Flying		JH
L063	24/04/2019	11:15:02	Lapwing	2	PB4, (Cutover bog) Possible nesting pair		JH
N/A	24/04/2019		Lapwing	7	PB4, (Cutover bog) Flushed by surveyor	Just north of VP4	JH
L064	01/05/2019	05:54:26	Lapwing	4	PB4, (Cutover bog)		JH
L065	01/05/2019	06:38:56	Lapwing	2	PB4, (Cutover bog)		JH
L066	08/05/2019	13:14:18	Lapwing	2	PB4, (Cutover bog) Flushed by observer. Suitable nesting habitat		JH
L067	14/05/2019	04:53:43	Lapwing	1	PB4, (Cutover bog) Disturbed by observer		JH
L068	14/05/2019	05:59:26	Lapwing	4	PB4, (Cutover bog) Flushed from wet area by observer		JH
L069	14/05/2019	09:52:17	Lapwing	1	PB4, (Cutover bog) Flushed from wet area by observer		JH

Breeding Bird Survey							
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity	Comments	Surveyor
L070	14/05/2019	10:09:01	Lapwing	2	PB4, (Cutover bog) Flushed by observer from wet area of PB4		JH
L071	17/05/2019	12:59:17	Lapwing	1	PB4, (Cutover bog) GA1, (Improved agricultural grassland)		JH
L072	17/05/2019	13:03:37	Lapwing	2	PB4, (Cutover bog) GA1, (Improved agricultural grassland) Flushed from pb4 y observer		JH
L073	24/05/2019	05:13:39	Lapwing	1	PB4, (Cutover bog) Flushed by observer		JH
L074	24/05/2019	05:33:41	Lapwing	2	PB4, (Cutover bog) Flushed by observer		JH
L075	11/06/2019	04:54:57	Lapwing	2	PB4, (Cutover bog) Flying and calling		JH
L076	11/06/2019	04:56:48	Lapwing	2	PB4, (Cutover bog) Flying and calling		JH
L077	12/06/2019	04:42:31	Lapwing	2	PB4, (Cutover bog) Flying and calling		JH
L078	12/06/2019	04:56:11	Lapwing	1	PB4, (Cutover bog) Flying and calling		JH
L079	12/06/2019	05:16:59	Lapwing	4	PB4, (Cutover bog) Landing on wet area of PB4		JH
L080	12/06/2019	05:44:45	Lapwing	2	PB4, (Cutover bog) Flying and calling		JH
L081	12/06/2019	08:38:12	Lapwing	3	PB4, (Cutover bog) WD4, (Conifer plantation) Travelling NE across the site		JH
L082	12/06/2019	09:09:26	Lapwing	2	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Roosting at edge of wet area		JH
L083	13/06/2019	09:14:18	Lapwing	1	FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Flying		JH
L084	14/06/2019	05:02:28	Lapwing	2	PB4, (Cutover bog) Flying and calling		JH
L085	14/06/2019	06:02:41	Lapwing	4	PB4, (Cutover bog) Flying and calling		JH
L086	14/06/2019	06:20:38	Lapwing	2	PB4, (Cutover bog) Flying and calling		JH
L087	18/06/2019	04:20:23	Lapwing	2	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Flying and calling		JH
L088	18/06/2019	04:35:17	Lapwing	1	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Flying and calling		JH

Breeding Bird Survey							
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity	Comments	Surveyor
L089	18/06/2019	08:54:30	Lapwing	12	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Flying and landing on cutaway		JH
L090	20/06/2019	05:49:35	Lapwing	1	PB4, (Cutover bog) Flying and calling		JH
L091	01/07/2019	10:07:05	Lapwing	35	FL2, (Acid oligotrophic lakes) PB4, (Cutover bog)		JH
L092	01/07/2019	12:20:17	Lapwing	30	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes)		JH
L093	05/07/2019	07:45:55	Lapwing	1	PB4, (Cutover bog)		JH
L094	05/07/2019	07:53:08	Lapwing	2	PB4, (Cutover bog) Possibly lost nests due to milling of peat in original locations recorded in spring		JH
L095	09/07/2019	10:44:25	Lapwing	1	PB4, (Cutover bog) Disturbed by observer		JH
L096	17/07/2019	09:24:13	Lapwing	14	PB4, (Cutover bog)		JH
L097	25/07/2019	13:08:58	Lapwing	2	PB4, (Cutover bog)		JH

Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
L001	02/08/2018		Lapwing	28	Roosting	FL8, (Other artificial lakes and ponds)	JK
L002	09/08/2018		Lapwing	35	Feeding/Roosting	FL8, (Other artificial lakes and ponds)	JK
L003	24/08/2018		Lapwing	22	Feeding/Roosting	FL8, (Other artificial lakes and ponds)	JK
L004	19/09/2018		Lapwing	31	Feeding/Roosting		JK
L005	24/09/2018		Lapwing	18	Feeding/Roosting		JK
L006	03/10/2018		Lapwing	1		Disturbed from wet area by observer	JH
L007	03/10/2018		Lapwing	1			JH
L008	05/10/2018		Lapwing	1			JH

Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
L009	15/10/2018		Lapwing	4			JH
L010	22/10/2018	11:00:00	Lapwing	9		Disturbed by observer from PB4	JH
L011	05/11/2018	13:12:00	Lapwing	16		Flying overhead	JH
L012	05/11/2018	13:28:00	Lapwing	29		Flying overhead	JH
L013	05/11/2018	13:36:00	Lapwing	7	Roosting	Roosting on flooded area of cutover bog.	JH
L014	05/11/2018		Lapwing	50			JH
L015	05/11/2018		Lapwing	17			JH
L016	05/11/2018		Lapwing	30			JH
L017	05/11/2018	14:21:00	Lapwing	400		Flying over flooded area of cutover bog	JH
L018	12/11/2018	09:31:00	Lapwing	13		Flying and landing on flooded area of bog.	JH
L019	27/11/2018	10:44:00	Lapwing	350	Roosting	Roosting on flooded area. Disturbed by observer. Landed back on flooded area	JH
L020	27/11/2018	10:44:00	Lapwing	250	Roosting	Roosting on flooded area of cutover bog.	JH
L021	03/12/2018	09:30:00	Lapwing	90	Roosting	Roosting on flooded area of cutover bog.	JH
L022	05/12/2018	10:22:00	Lapwing	1	Roosting	Roosting on bog. Disturbed by observer	JH
L023	02/01/2019		Lapwing	5			JH
L024	17/01/2019	13:49:00	Lapwing	80	Foraging	Foraging on improved grassland	JH
L025	04/03/2019		Lapwing	7		Noggus Bog	JH
L026	05/03/2019	10:55:00	Lapwing	2	Roosting at Breeding Territory	Disturbed by bog train. Flew and landed back on bog	JH
L027	05/03/2019	15:02:00	Lapwing	2	Roosting at Breeding Territory	Disturbed by observer. Flew and landed back on bog	JH
L028	12/03/2019	09:18:00	Lapwing	1	Roosting at Breeding Territory	Flushed from wet area by observer. Flying and calling	JH
L029	12/03/2019	09:27:00	Lapwing	1		Landing on wet area of bog	JH
L030	13/03/2019	11:30:00	Lapwing	3	Roosting	Flushed by observer	JH

Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
L031	14/03/2019	10:12:00	Lapwing	1	Roosting	Flying and landing on bog and grassland	JH
L032	28/03/2019		Lapwing	1		In flight	JH
L033	28/03/2019		Lapwing	4		Noggus Bog	JH
L034	28/03/2019		Lapwing	4	Breeding Territory	Breeding Territory	JH
L035	28/03/2019		Lapwing	2	Breeding Territory	Breeding Territory	JH
L036	28/03/2019		Lapwing	2	Breeding Territory	Breeding Territory	JH
L037	29/04/2019	11:30:50	Lapwing	6	Roosting	FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Roosting, flying and calling	JH
L038	29/04/2019	13:07:30	Lapwing	4	Roosting	Flying and calling	JH
L039	29/04/2019	13:08:48	Lapwing	2	Roosting	Roosting on edge of wet area	JH
L040	29/04/2019	13:21:07	Lapwing	4		Travelling	JH
L041	03/05/2019	13:06:06	Lapwing	10		FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Flying and calling	JH
L042	03/05/2019	14:08:10	Lapwing	2	Roosting	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes)	JH
L043	10/05/2019	12:13:27	Lapwing	4	Roosting	Roosting on flooded area of cutover bog.	JH
L044	10/05/2019	14:23:30	Lapwing	1	Roosting on island	Roosting on island	JH
L045	23/05/2019	10:36:37	Lapwing	5	Foraging at Breeding Territory	3 Lapwing chicks hatched and foraging. 2 adults in attendance	JH
L046	23/05/2019	10:49:10	Lapwing	2		FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Flying and calling	JH
L047	23/05/2019	11:30:42	Lapwing	4		FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Flying and calling	JH
L048	27/05/2019	11:48:56	Lapwing	2	Breeding Territory	Alarm Calling. Breeding Pair. Scrape with 4 eggs. Incubating when disturbed by observer searching for scrape.	JH
L049	27/05/2019	11:53:02	Lapwing	2		Flying and calling	JH
L050	24/09/2019	13:34:24	Lapwing	17	Roosting	Roosting at edge of island on FL2	JH

Migratory Bird Survey												
Map 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 (25-180m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
L01	24/10/2018	CMVP3	Lapwing	42	08:17:00	64		64			GA1, (Improved agricultural grassland) FW2, (Depositing/upland rivers) Travelling	JH
L02	24/10/2018	CMVP3	Lapwing	100	08:24:00	122				122	GA1, (Improved agricultural grassland) FW2, (Depositing/upland rivers) Travelling	JH
L03	24/10/2018	CMVP3	Lapwing	14	09:13:00	161			161		GA1, (Improved agricultural grassland) FW2, (Depositing/upland rivers) Travelling	JH
L04	21/11/2018	CMVP2	Lapwing	350	14:46:00	48	48				GA1, (Improved agricultural grassland) GS4, (Wet grassland) FW2, (Depositing/upland rivers) Landing in GA1	JH
L05	21/11/2018	CMVP2	Lapwing	170	16:28:00	52	52				GA1, (Improved agricultural grassland) FW2, (Depositing/upland rivers) Landing In GA1 Close to River	JH
L06	22/11/2018	CMVP3	Lapwing	70	15:40:00	109	40	69			FW2, (Depositing/upland rivers) GA1, (Improved agricultural grassland) Landing in GA1	JH
L07	26/11/2018	CMVP4	Lapwing	500	14:37:00	74	20	54			FW2, (Depositing/upland rivers) GA1, (Improved agricultural grassland) Circling and Landing in GA1 close to River	JH

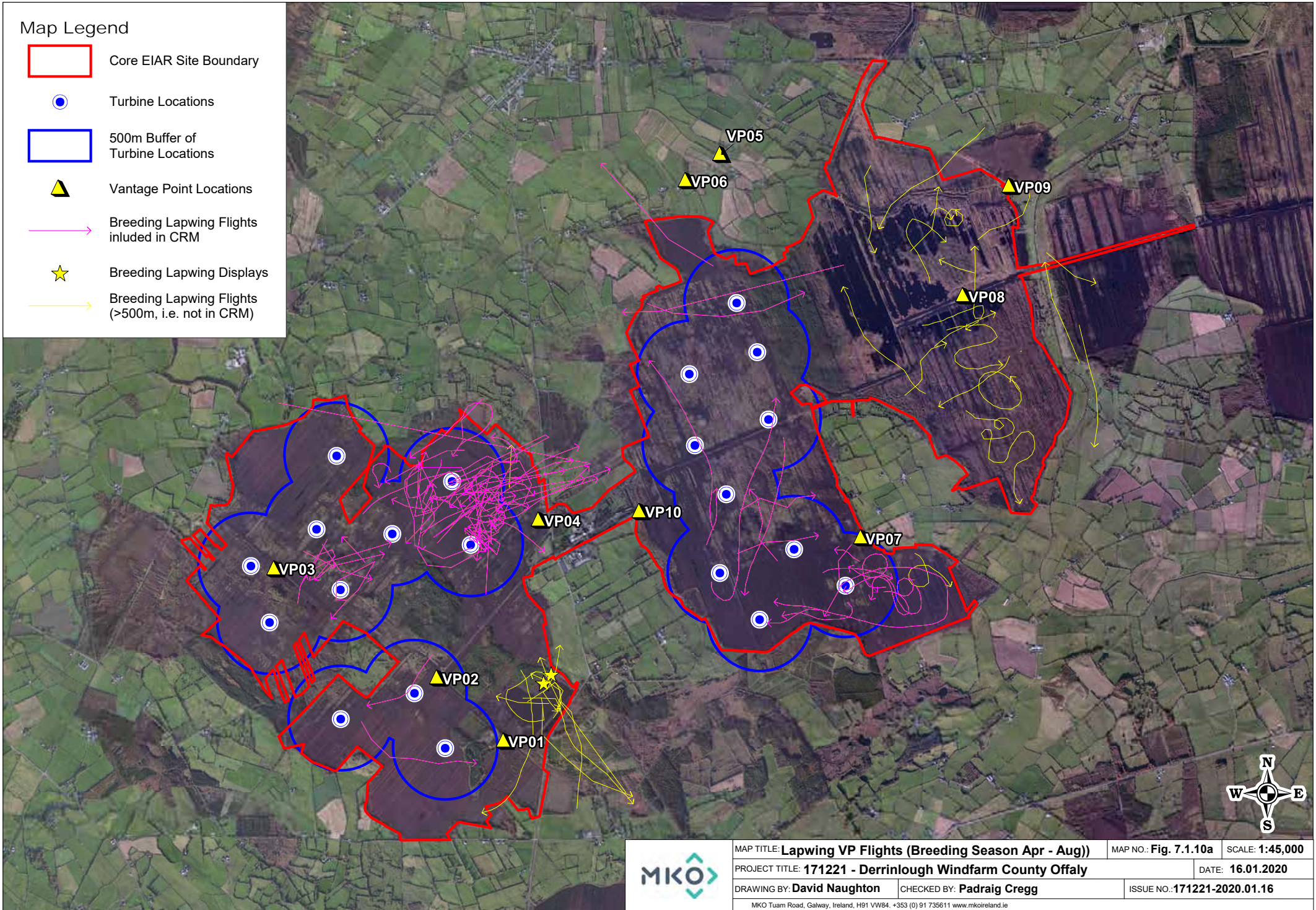
Migratory Bird Survey												
Map Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-180m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
L08	26/11/2018	CMVP4	Lapwing	50	16:10:00	110			110		FW2, (Depositing/upland rivers) GA1, (Improved agricultural grassland) Travelling	JH
L09	08/01/2019	CMVP2	Lapwing	1100	16:30:00	200			200		Travelling and landing AW	TR
L10	09/01/2019	CMVP4	Lapwing	300	15:45:00	240		40	200		Travelling and landing	TR
L11	11/01/2019	CMVP6	Lapwing	160	09:00:00	120		100	20		Travelling	TR
L12	21/01/2019	CMVP1	Lapwing	4	09:54:00	66			66		GA1, (Improved agricultural grassland) Travelling	JH
L13	21/01/2019	CMVP1	Lapwing	15	09:58:00	54			54		GA1, (Improved agricultural grassland) Travelling	JH
L14	22/01/2019	CMVP2	Lapwing	26	09:06:00	55	55				FW2, (Depositing/upland rivers) GA1, (Improved agricultural grassland) Travelling	JH
L15	29/01/2019	CMVP6	Lapwing	500	08:18:00	127			127		GA1, (Improved agricultural grassland) WD4, (Conifer plantation) Travelling	JH
L16	13/02/2019	CMVP5	Lapwing	150	08:05:00	60			60		GA1, (Improved agricultural grassland) Travelling	TR
L17	13/02/2019	CMVP5	Lapwing	60	08:00:00	60			60		GA1, (Improved agricultural grassland) Travelling	TR
L18	13/02/2019	CMVP5	Lapwing	200	08:40:00	65			65		GA1, (Improved agricultural grassland) Travelling	TR
L19	13/02/2019	CMVP5	Lapwing	300	09:20:00	60			60		GA1, (Improved agricultural grassland) Travelling	TR
L014	21/02/2019	CMVP2	Lapwing	60	08:52:00	122		122			FW2, (Depositing/upland rivers) GA1, (Improved agricultural grassland) Travelling	JH
L21	06/08/2019	CMVP3	Lapwing	1	21:48:49	20						TR

Migratory Bird Survey												
Map 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 (25-180m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
L22	09/09/2019	CMVP3	Lapwing	18	06:58:39	140		40	100		GA1, (Improved agricultural grassland) FW2, (Depositing/upland rivers) Landing in GA1	JH
L23	09/09/2019	CMVP3	Lapwing	30	08:53:37	72		72			GA1, (Improved agricultural grassland) FW2, (Depositing/upland rivers) Landing on flooded area	JH
L24	20/09/2019	CMVP4	Lapwing	37	07:55:40	156		156			GA1, (Improved agricultural grassland) FW2, (Depositing/upland rivers) Landing at edge of Shannon	JH

Incidental Observations						
Date	Survey Type	Location	Species	No. of Birds	Notes	Surveyor
21/03/2019	HH Roost Survey	HHVP3 Derrybrat	Lapwing	1	17:02PM Flying, Calling and landing on wet area of PB4	JH
26/06/2018	Non-Survey	Stonestown wetland	Lapwing	15+	roosting/feeding, no breeding evidence	PT
07/03/2019	Crane VP	Close to VP 4	Lapwing	2	16:04 PM Disturbed by observer on PB4	JH
07/03/2019	Crane VP	Close to VP 4	Lapwing	4	17:33 PM Landing on PB4	JH
14/03/2019	Crane VP	Close to VP 4	Lapwing	2	16:20PM On wet area of PB4	JH
14/03/2019	Crane VP	Close to VP 4	Lapwing	4	17:33 PM Flying, Calling and Landing on wet area of PB\$	JH
16/05/2018	Breeding Raptor Survey	Noggus Bog	Lapwing	2	Flying/calling in wet area of PB4	JH
16/05/2018	Breeding Raptor Survey	Noggus Bog	Lapwing	2	Flying/calling in wet area of PB4	JH

Map Legend

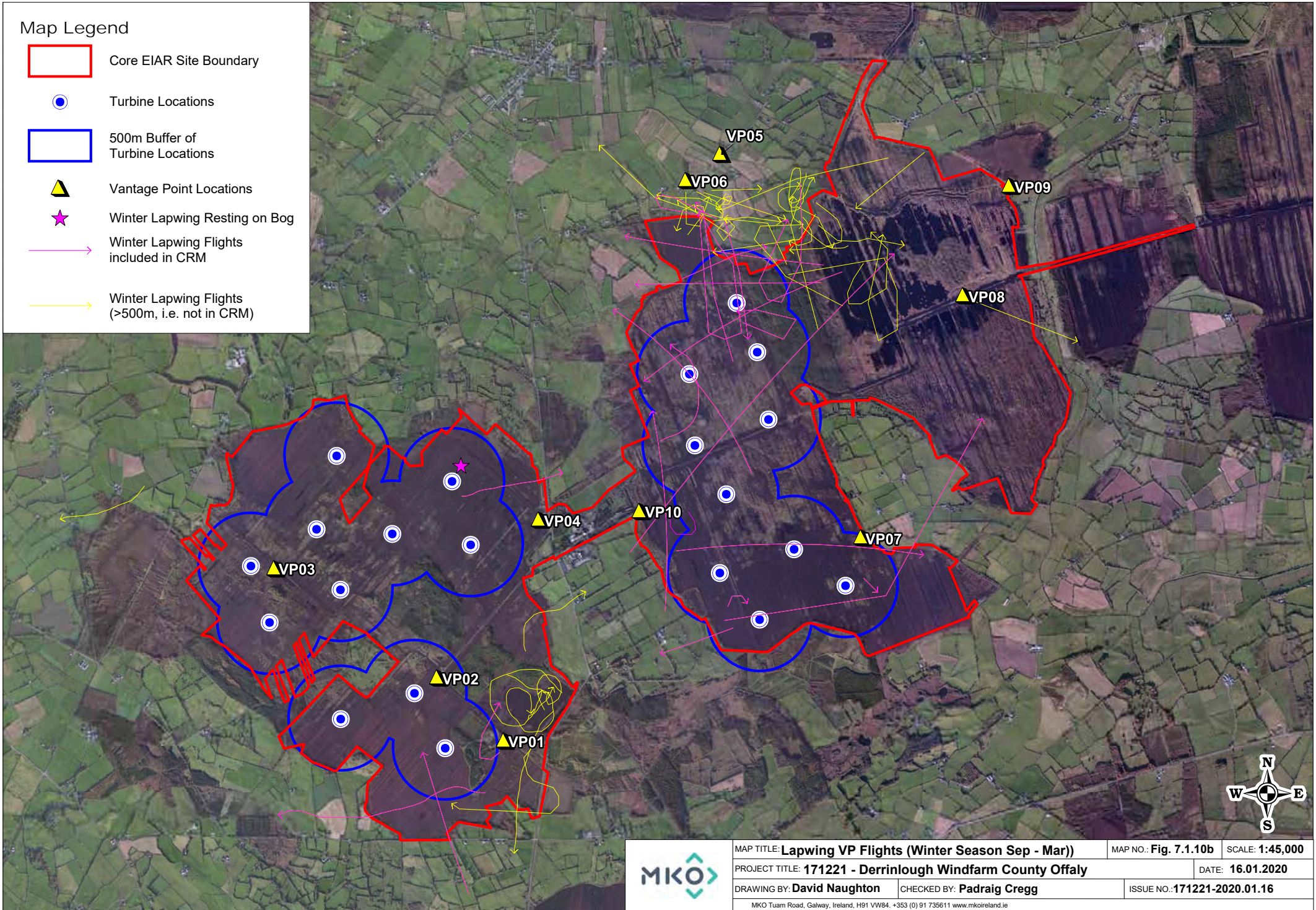
- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ Vantage Point Locations
- Breeding Lapwing Flights included in CRM
- ★ Breeding Lapwing Displays
- Breeding Lapwing Flights (>500m, i.e. not in CRM)



	MAP TITLE: Lapwing VP Flights (Breeding Season Apr - Aug)	MAP NO.: Fig. 7.1.10a	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Windfarm County Offaly		DATE: 16.01.2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16	
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie			







Map Legend

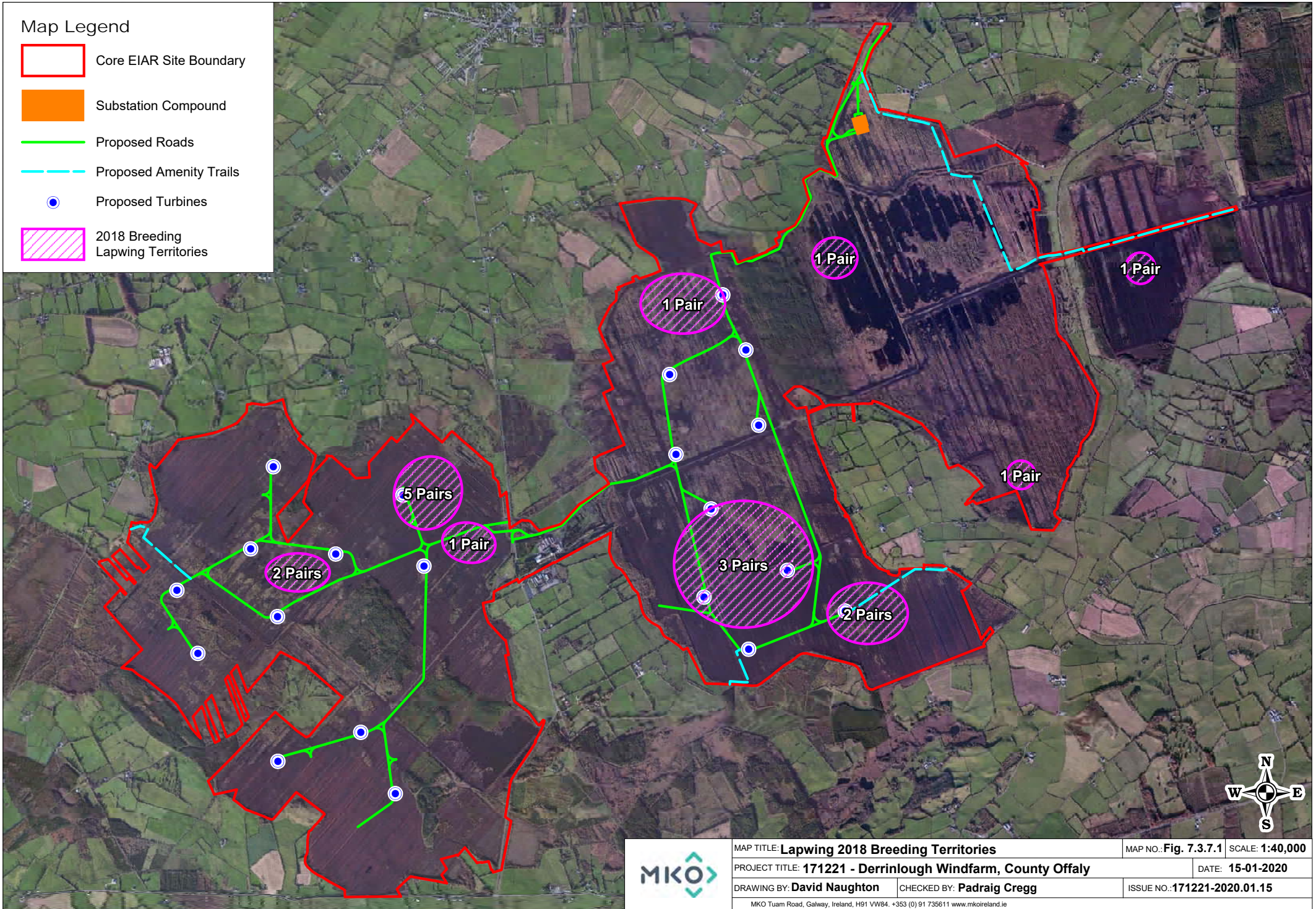
- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ Vantage Point Locations
- ★ Winter Lapwing Resting on Bog
- Winter Lapwing Flights included in CRM
- Winter Lapwing Flights (>500m, i.e. not in CRM)



	MAP TITLE: Lapwing VP Flights (Winter Season Sep - Mar)	MAP NO.: Fig. 7.1.10b	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Windfarm County Offaly		DATE: 16.01.2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16	
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie			

Map Legend

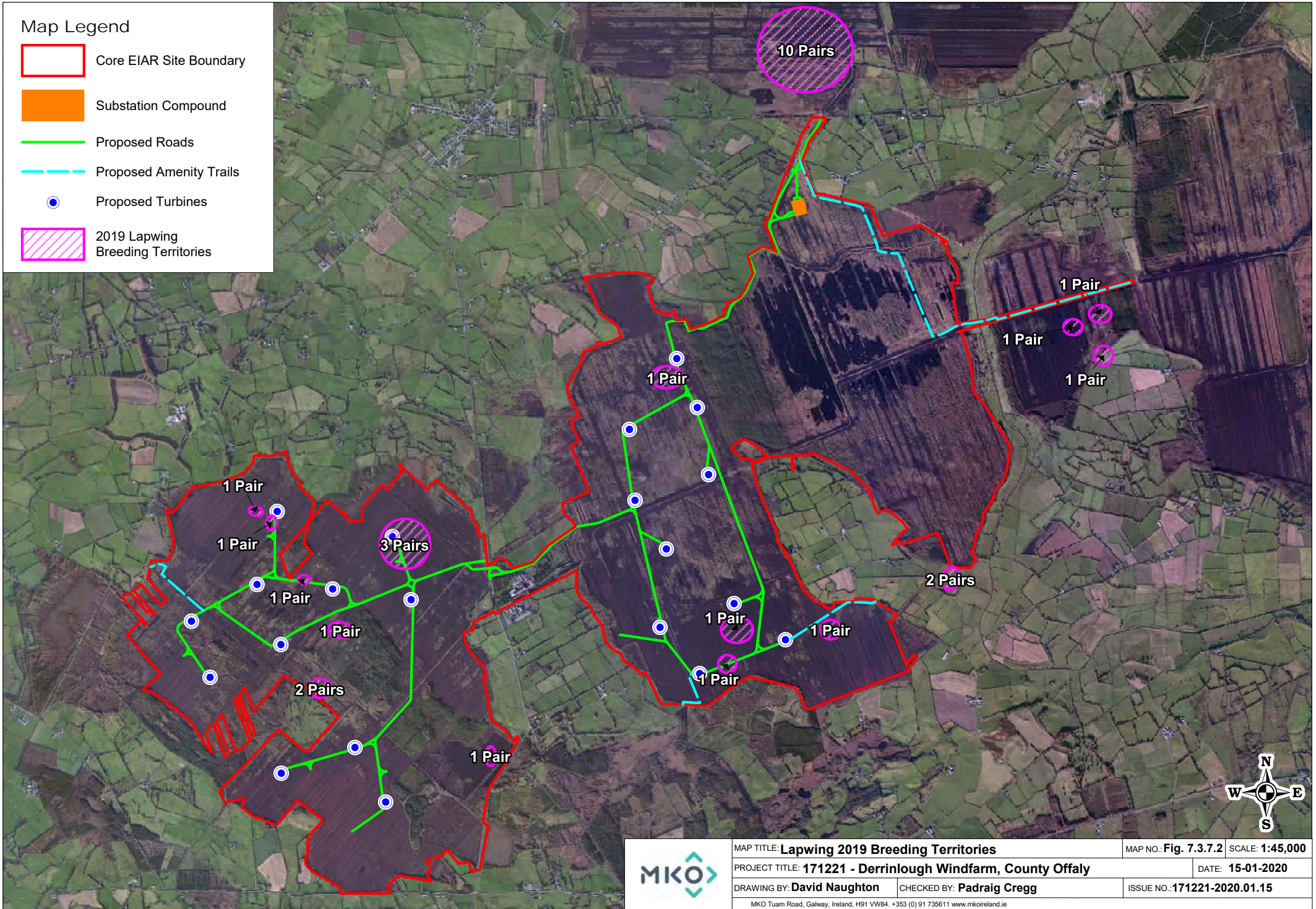
-  Core EIAR Site Boundary
-  Substation Compound
-  Proposed Roads
-  Proposed Amenity Trails
-  Proposed Turbines
-  2018 Breeding Lapwing Territories



	MAP TITLE: Lapwing 2018 Breeding Territories	MAP NO.: Fig. 7.3.7.1	SCALE: 1:40,000	
	PROJECT TITLE: 171221 - Derrinlough Windfarm, County Offaly		DATE: 15-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.15	
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Map Legend

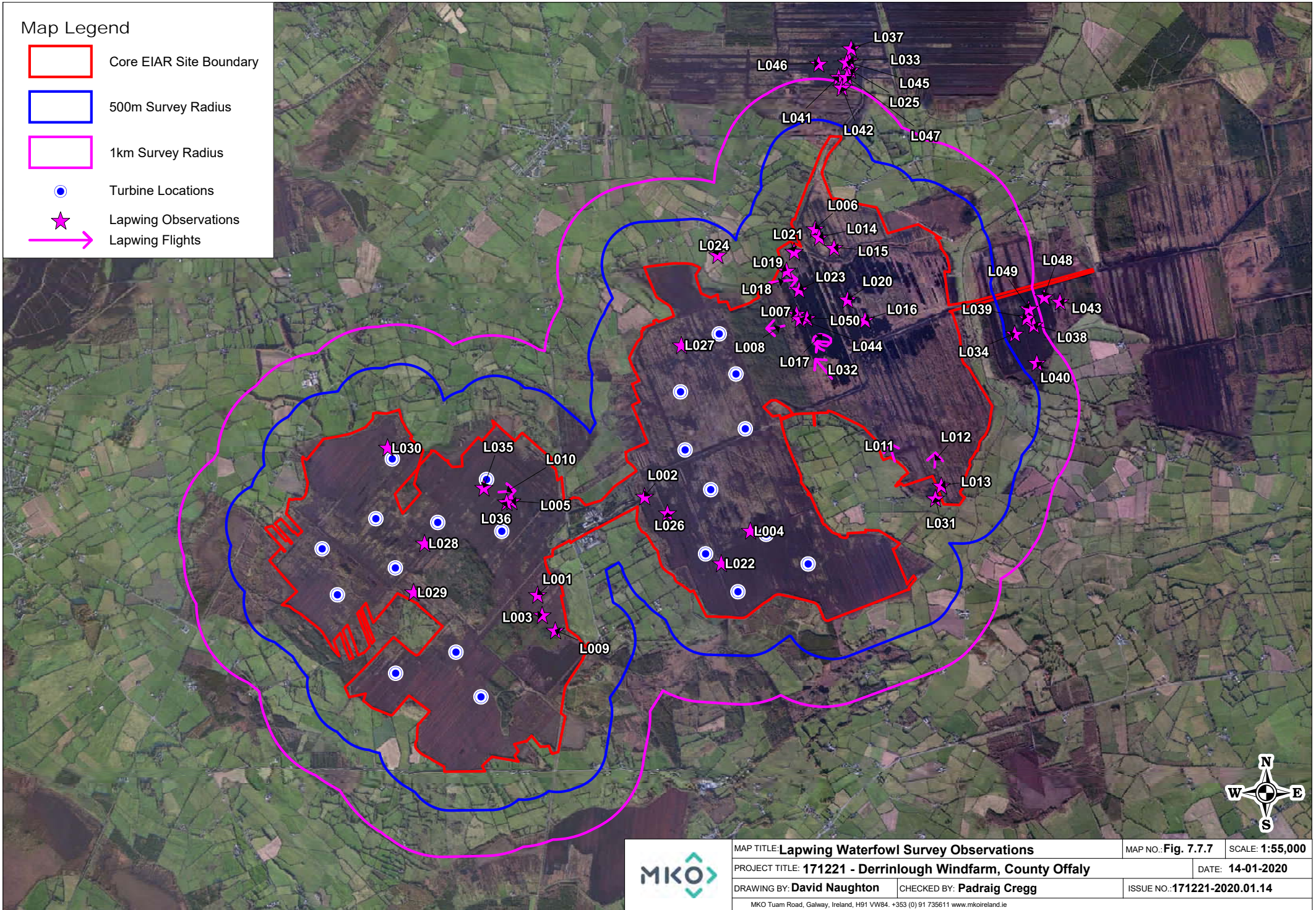
- Core EIAR Site Boundary
- Substation Compound
- Proposed Roads
- Proposed Amenity Trails
- Proposed Turbines
- 2019 Lapwing Breeding Territories



	MAP TITLE: Lapwing 2019 Breeding Territories	MAP NO.: Fig. 7.3.7.2	SCALE: 1:45,000
	PROJECT TITLE: 171221 - Derrinlough Windfarm, County Offaly	DATE: 15-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.15
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie		

Map Legend

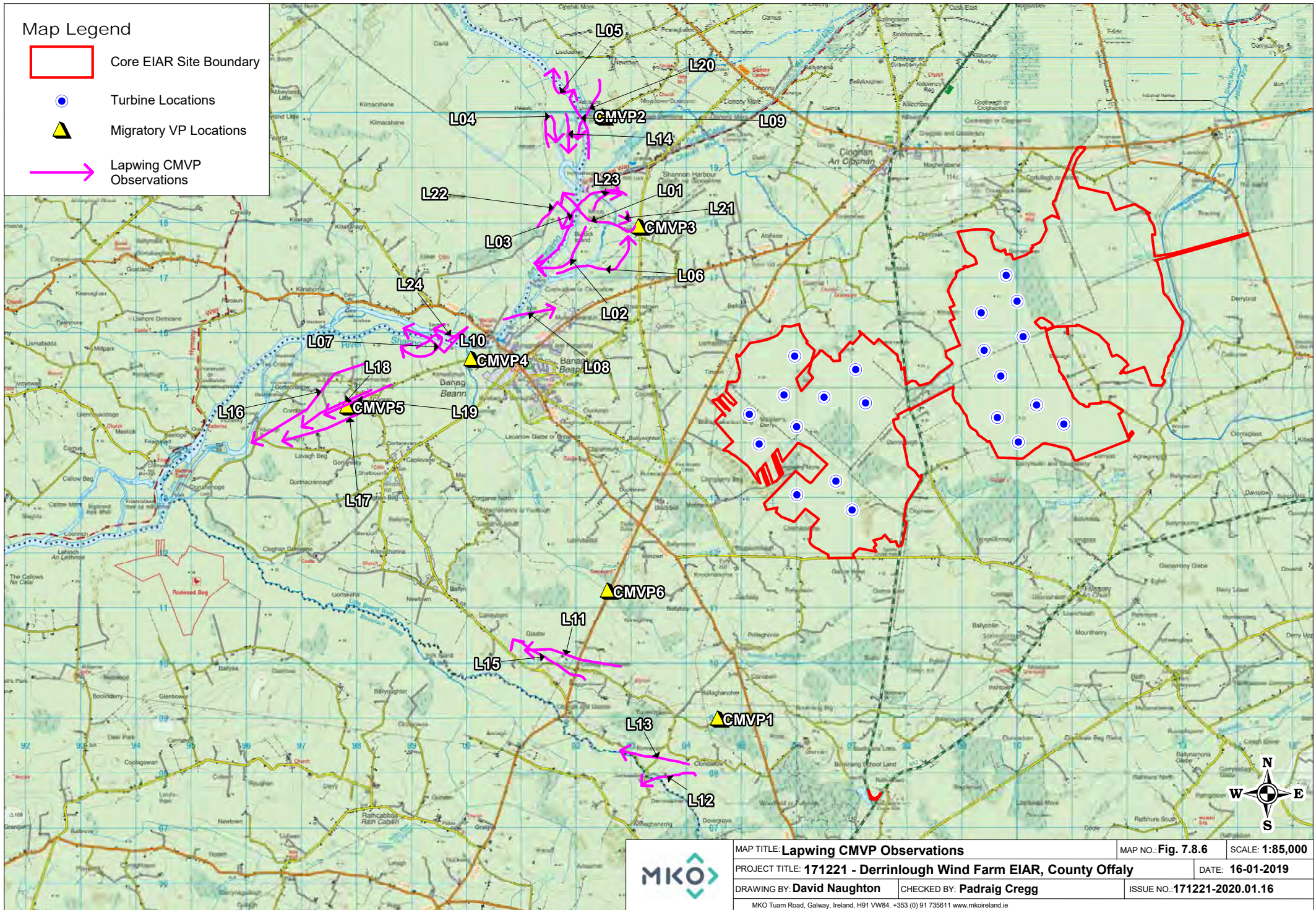
- Core EIAR Site Boundary
- 500m Survey Radius
- 1km Survey Radius
- Turbine Locations
- ★ Lapwing Observations
- Lapwing Flights



	MAP TITLE: Lapwing Waterfowl Survey Observations	MAP NO.: Fig. 7.7.7	SCALE: 1:55,000
	PROJECT TITLE: 171221 - Derrinlough Windfarm, County Offaly		DATE: 14-01-2020
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.14
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Map Legend

- Core EIAR Site Boundary
- Turbine Locations
- ▲ Migratory VP Locations
- Lapwing CMVP Observations



	MAP TITLE: Lapwing CMVP Observations		MAP NO.: Fig. 7.8.6	SCALE: 1:85,000	
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly			DATE: 16-01-2019	
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.16
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Table 11 Black-headed Gull Survey Data

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BH0001	13/04/2018	5	Black-headed Gull	8	06:55:00	40		40			GA1, (Improved agricultural grassland) Travelling	JH
BH0002	13/04/2018	5	Black-headed Gull	2	07:18:00	44		44			GA1, (Improved agricultural grassland) Travelling	JH
BH0003	13/04/2018	5	Black-headed Gull	3	07:20:00	37		37			GA1, (Improved agricultural grassland) Travelling	JH
BH0004	13/04/2018	5	Black-headed Gull	8	09:05:00	53		53			GA1, (Improved agricultural grassland) Travelling	JH
BH0005	13/04/2018	5	Black-headed Gull	4	09:15:00	45		45			GA1, (Improved agricultural grassland) Travelling	JH
BH0006	13/04/2018	5	Black-headed Gull	7	09:40:00	65		64			GA1, (Improved agricultural grassland) PB4, (Cutover bog) Travelling	JH
BH0007	13/04/2018	5	Black-headed Gull	5	09:44:00	48		48			PB4, (Cutover bog) Travelling	JH
BH0008	13/04/2018	5	Black-headed Gull	6	10:09:00	24		24			GA1, (Improved agricultural grassland) Travelling	JH
BH0009	13/04/2018	5	Black-headed Gull	1	11:13:00	47		47			GA1, (Improved agricultural grassland) Travelling	JH
BH0010	13/04/2018	5	Black-headed Gull	2	11:36:00	57		57			GA1, (Improved agricultural grassland) Travelling	JH
BH0011	18/04/2018	8	Black-headed Gull	4	06:40:00	39		39			PB4, (Cutover bog) WD4, (Conifer plantation) Travelling	JH
BH0012	18/04/2018	8	Black-headed Gull	5	07:15:00	84			84		PB4, (Cutover bog) travelling	JH
BH0013	18/04/2018	8	Black-headed Gull	3	07:47:00	34		34			PB4, (Cutover bog) travelling	JH
BH0014	18/04/2018	8	Black-headed Gull	2	08:25:00	95		95			PB4, (Cutover bog) travelling	JH
BH0015	18/04/2018	8	Black-headed Gull	2	09:26:00	98		98			PB4, (Cutover bog) Travelling	JH
BH0016	18/04/2018	8	Black-headed Gull	5	09:51:00	127			127		PB4, (Cutover bog) WD4, (Conifer plantation) Travelling	JH

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BH0017	18/04/2018	8	Black-headed Gull	2	11:50:00	126		20	106		PB4, (Cutover bog) travelling	JH
BH0018	19/04/2018	7	Black-headed Gull	5	06:38:00	135			135		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
BH0019	19/04/2018	7	Black-headed Gull	8	07:09:00	49			49		PB4, (Cutover bog) Travelling	JH
BH0021	19/04/2018	7	Black-headed Gull	1	07:55:00	78		78			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
BH0022	19/04/2018	7	Black-headed Gull	3	08:10:00	127			127		GA1, (Improved agricultural grassland) PB4, (Cutover bog) travelling	JH
BH0024	19/04/2018	7	Black-headed Gull	2	10:28:00	110			110		GA1, (Improved agricultural grassland) PB4, (Cutover bog) travelling	JH
BH0025	19/04/2018	7	Black-headed Gull	14	11:08:00	80			80		PB4, (Cutover bog) travelling	JH
BH0023	19/04/2018	7	Black-headed Gull	3	08:54:00	87		87			PB4, (Cutover bog) Landing on wet area of PB4	JH
BH0020	19/04/2018	7	Black-headed Gull	5	07:57:00	47		47			PB4, (Cutover bog) landed on wet area of PB4	JH
BH0026	25/04/2018	6	Black-headed Gull	1	08:01:00	89		89			PB4, (Cutover bog) Travelling	JH
BH0027	26/04/2018	10	Black-headed Gull	9	07:00:00	90		90			PB4, (Cutover bog) Travelling	JH
BH0028	26/04/2018	10	Black-headed Gull	4	07:13:00	64			64		PB4, (Cutover bog) Travelling	JH
BH0029	26/04/2018	10	Black-headed Gull	4	07:39:00	102		102			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
BH0030	26/04/2018	10	Black-headed Gull	5	07:48:00	123			123		PB4, (Cutover bog) Travelling	JH
BH0031	26/04/2018	10	Black-headed Gull	9	07:55:00	149			149		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
BH0032	26/04/2018	10	Black-headed Gull	10	08:42:00	73		73			PB4, (Cutover bog) GA1, (Improved agricultural grassland) travelling	JH
BH0033	26/04/2018	10	Black-headed Gull	2	08:50:00	105			105		PB4, (Cutover bog) travelling	JH

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BH0034	26/04/2018	10	Black-headed Gull	9	09:05:00	212			80	132	PB4, (Cutover bog) travelling	JH
BH0035	26/04/2018	10	Black-headed Gull	10	10:55:00	98		98			PB4, (Cutover bog) GA1, (Improved agricultural grassland) travelling	JH
BH0036	26/04/2018	10	Black-headed Gull	2	11:07:00	102			102		PB4, (Cutover bog) GA1, (Improved agricultural grassland) travelling	JH
BH0041	28/04/2018	1	Black-headed Gull	1	07:43:00	55		55			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
BH0039	28/04/2018	1	Black-headed Gull	4	07:10:00	18	18				PB4, (Cutover bog) moving position on flooded area of PB4	JH
BH0037	28/04/2018	1	Black-headed Gull	1	06:09:00	21		21			PB4, (Cutover bog) WD4, (Conifer plantation) LEAVING ROOST SITE	JH
BH0038	28/04/2018	1	Black-headed Gull	1	06:36:00	42		12	30		PB4, (Cutover bog) Leaving roost site	JH
BH0042	28/04/2018	1	Black-headed Gull	4	08:44:00	115	30	85			PB4, (Cutover bog) Landed on flooded area PB4	JH
BH0043	28/04/2018	1	Black-headed Gull	2	08:50:00	46	10	36			PB4, (Cutover bog) Landed on flooded area PB4	JH
BH0040	28/04/2018	1	Black-headed Gull	2	07:18:00	45	10	35			GA1, (Improved agricultural grassland) PB4, (Cutover bog) LANDED ON FLOODED AREA OF PB4	JH
BH0044	28/04/2018	1	Black-headed Gull	2	11:05:00	154	15	25	114		PB4, (Cutover bog) circling and landing in flooded area of PB4	JH
BH0045	30/04/2018	4	Black-headed Gull	1	07:27:00	28		28			PB4, (Cutover bog) Travelling	JH
BH0046	30/04/2018	4	Black-headed Gull	3	09:08:00	35	10	25			PB4, (Cutover bog) landing on wet area of PB4	JH
BH0047	30/04/2018	4	Black-headed Gull	1	09:22:00	42			42		PB4, (Cutover bog) WD4, (Conifer plantation) landing on wet area of PB4	JH
BH0048	30/04/2018	4	Black-headed Gull	1	10:06:00	24	24				PB4, (Cutover bog) landing on pb4	JH

Vantage Point Survey												
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BH0049	03/05/2018	9	Black-headed Gull	6	15:55:00	106			106		PB4, (Cutover bog) Travelling	JH
BH0051	03/05/2018	9	Black-headed Gull	3	19:46:00	77		77			PB4, (Cutover bog) Travelling	JH
BH0052	03/05/2018	9	Black-headed Gull	3	20:42:00	127			127		PB4, (Cutover bog) Travelling	JH
BH0050	03/05/2018	9	Black-headed Gull	1	16:14:00	30	8	22			PB4, (Cutover bog) Landing on wet area of PB4	JH
BH0102	05/05/2018	2	Black-headed Gull	1	11:05:00	35			35		PB4, (Cutover bog) WD4, (Conifer plantation)	P.Troake
	05/05/2018	2	Black-headed Gull	1	12:16:00	25			25		PB4, (Cutover bog)	P.Troake
BH0053	10/05/2018	5	Black-headed Gull	2	15:56:00	121	121				PB4, (Cutover bog) Travelling	JH
BH0056	10/05/2018	5	Black-headed Gull	7	18:26:00	40		40			PB4, (Cutover bog) Travelling	JH
BH0054	10/05/2018	5	Black-headed Gull	2	16:15:00	88	20	68			PB4, (Cutover bog) Landing on flooded area of PB4	JH
BH0055	10/05/2018	5	Black-headed Gull	1	17:56:00	22	22				PB4, (Cutover bog) Landing on flooded area of PB4	JH
BH0057	15/05/2018	6	Black-headed Gull	3	17:44:00	47		10			GA1, (Improved agricultural grassland) Travelling	JH
BH0058	15/05/2018	6	Black-headed Gull	34	20:49:00	243		243			GA1, (Improved agricultural grassland) PB4, (Cutover bog) Travelling	JH
BH0059	17/05/2018	7	Black-headed Gull	15	16:08:00	118		118			PB4, (Cutover bog) WD4, (Conifer plantation) GA1, (Improved agricultural grassland) Travelling Flock	JH
BH0060	17/05/2018	7	Black-headed Gull	2	16:21:00	58		58			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
BH0061	17/05/2018	7	Black-headed Gull	1	16:36:00	55		55			PB4, (Cutover bog) Travelling	JH
BH0062	17/05/2018	7	Black-headed Gull	9	16:39:00	69		69			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
BH0063	17/05/2018	7	Black-headed Gull	2	16:41:00	61			61		GA1, (Improved agricultural grassland) PB4, (Cutover bog) Travelling	JH

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BH0065	17/05/2018	7	Black-headed Gull	1	17:09:00	48		48			PB4, (Cutover bog) Travelling	JH
BH0066	17/05/2018	7	Black-headed Gull	4	17:10:00	72		72			PB4, (Cutover bog) WD4, (Conifer plantation) GA1, (Improved agricultural grassland) Travelling	JH
BH0067	17/05/2018	7	Black-headed Gull	5	17:18:00	80		80			PB4, (Cutover bog) WD4, (Conifer plantation) GA1, (Improved agricultural grassland) Travelling	JH
BH0068	17/05/2018	7	Black-headed Gull	4	17:24:00	65		65			PB4, (Cutover bog) WD4, (Conifer plantation) GA1, (Improved agricultural grassland) Travelling	JH
BH0069	17/05/2018	7	Black-headed Gull	1	17:37:00	137		137			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
BH0070	17/05/2018	7	Black-headed Gull	5	17:54:00	84		84			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
BH0071	17/05/2018	7	Black-headed Gull	3	18:15:00	59		59			PB4, (Cutover bog) Travelling	JH
BH0072	17/05/2018	7	Black-headed Gull	2	18:17:00	96	26	70			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
BH0073	17/05/2018	7	Black-headed Gull	9	18:36:00	103	37	66			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
BH0074	17/05/2018	7	Black-headed Gull	1	19:40:00	82		82			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
BH0075	17/05/2018	7	Black-headed Gull	4	19:49:00	92	30	62			PB4, (Cutover bog) WD4, (Conifer plantation) GA1, (Improved agricultural grassland) Travelling	JH
BH0076	17/05/2018	7	Black-headed Gull	1	19:54:00	36			36		PB4, (Cutover bog) Travelling	JH
BH0077	17/05/2018	7	Black-headed Gull	3	20:00:00	94	44	50			PB4, (Cutover bog) WD4, (Conifer plantation) GA1, (Improved agricultural grassland) Travelling	JH

Vantage Point Survey												
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BH0078	17/05/2018	7	Black-headed Gull	3	20:14:00	71		71			PB4, (Cutover bog) WD4, (Conifer plantation) Travelling	JH
BH0079	17/05/2018	7	Black-headed Gull	1	20:50:00	62		62			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
BH0080	17/05/2018	7	Black-headed Gull	9	20:56:00	35			35		PB4, (Cutover bog) Travelling	JH
BH0081	17/05/2018	7	Black-headed Gull	2	21:10:00	40		40			PB4, (Cutover bog) Travelling	JH
BH0064	17/05/2018	7	Black-headed Gull	8	16:50:00	141			141		PB4, (Cutover bog) Spiralling and Travelling	JH
BH0215	23/05/2018	8	Black-headed Gull	1	17:46:00	37		37			PB4, (Cutover bog) Travelling	JH
BH0082	23/05/2018	8	Black-headed Gull	1	18:53:00	34	20	14			PB4, (Cutover bog) Travelling	JH
BH0083	23/05/2018	8	Black-headed Gull	6	19:37:00	94		94			PB4, (Cutover bog) Travelling	JH
BH0084	23/05/2018	8	Black-headed Gull	3	19:47:00	46		46			PB4, (Cutover bog) WD4, (Conifer plantation) Travelling	JH
BH0085	23/05/2018	8	Black-headed Gull	2	20:03:00	35		35			PB4, (Cutover bog) Travelling	JH
BH0086	23/05/2018	8	Black-headed Gull	2	20:17:00	29		29			PB4, (Cutover bog) Travelling	JH
BH0087	23/05/2018	8	Black-headed Gull	5	20:34:00	33		33			PB4, (Cutover bog) Travelling	JH
BH0103	25/05/2018	1	Black-headed Gull	4	07:19:00	200			110		PB4, (Cutover bog) GA1, (Improved agricultural grassland)	P.Troake
BH0104	25/05/2018	1	Black-headed Gull	7	07:49:00	200			100		PB1, (Raised bog) GA1, (Improved agricultural grassland)	P.Troake
BH0105	25/05/2018	1	Black-headed Gull	2	08:31:00	180				50	PB4, (Cutover bog) GA1, (Improved agricultural grassland)	P.Troake
BH0106	25/05/2018	1	Black-headed Gull	2	08:44:00	25			25		W, (Woodland and scrub)	P.Troake
BH0107	25/05/2018	1	Black-headed Gull	2	11:34:00	110	65	45			PB4, (Cutover bog)	P.Troake

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	25/05/2018	1	Black-headed Gull	8							Small colony (<5 pairs?) on swampy island in cutover flood, close to vp; constant activity to 0735, frequent to occasional flights thereafter to end of survey, generally up to 5 birds, typically to 25 metres, occasionally to 75 metres; activity mostly over near part of flood and over vp, partly due to my presence, birds calling overhead; due to frequency of flights, only flights away from this area were mapped.	P.Troake
BH0088	30/05/2018	10	Black-headed Gull	1	16:49:00	75		75			PB4, (Cutover bog) Travelling	JH
BH0090	30/05/2018	10	Black-headed Gull	1	18:28:00	52		52			PB4, (Cutover bog) Travelling	JH
BH0091	30/05/2018	10	Black-headed Gull	2	18:44:00	56			56		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
BH0094	30/05/2018	10	Black-headed Gull	5	20:50:00	177		130	47		PB4, (Cutover bog) Travelling	JH
BH0095	30/05/2018	10	Black-headed Gull	2	21:02:00	72		72			PB4, (Cutover bog) Travelling	JH
BH0089	30/05/2018	10	Black-headed Gull	1	17:55:00	40	10	30			PB4, (Cutover bog) Landing on wet area of PB4	JH
BH0092	30/05/2018	10	Black-headed Gull	1	19:02:00	34	14	20			PB4, (Cutover bog) Landing on wet area of PB4	JH
BH0093	30/05/2018	10	Black-headed Gull	40	20:06:00	158	36	122			PB4, (Cutover bog) Circling flooded area of PB4 and landing	JH
BH0097	31/05/2018	4	Black-headed Gull	3	16:32:00	129			129		PB4, (Cutover bog) Travelling	JH
BH0100	31/05/2018	4	Black-headed Gull	14	18:20:00	182			140	42	PB4, (Cutover bog) Spiralling on wind	JH
BH0096	31/05/2018	4	Black-headed Gull	3	16:30:00	32	32				PB4, (Cutover bog) Landing on wet area of PB4	JH

Vantage Point Survey												
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BH0098	31/05/2018	4	Black-headed Gull	3	16:51:00	107	70	37			PB4, (Cutover bog) Landing on wet area of PB4	JH
BH0099	31/05/2018	4	Black-headed Gull	1	17:07:00	47	14	33			PB4, (Cutover bog) Landing on wet area of PB4	JH
BH0101	31/05/2018	4	Black-headed Gull	2	20:23:00	54	13	41			PB4, (Cutover bog) Landing on wet area of PB4	JH
BH0108	01/06/2018	5	Black-headed Gull	1	10:01:00	51		51			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
BH0109	01/06/2018	5	Black-headed Gull	1	12:18:00	71				71	PB4, (Cutover bog) Travelling	JH
BH0110	01/06/2018	5	Black-headed Gull	2	13:07:00	65	15	50			PB4, (Cutover bog) Landing on flooded area	JH
BH0211	05/06/2018	1	Black-headed Gull	4	16:10:00	88			88		PB4, (Cutover bog) WN7, (Bog woodland) Travelling	JK
BH0212	05/06/2018	1	Black-headed Gull	4	18:24:00	181			181		PB4, (Cutover bog) WN7, (Bog woodland) Travelling	JK
BH0213	05/06/2018	1	Black-headed Gull	2	20:01:00	124			124		PB4, (Cutover bog) WN7, (Bog woodland) Travelling	JK
BH0214	05/06/2018	1	Black-headed Gull	6	20:39:00	89			89		PB4, (Cutover bog) WN7, (Bog woodland) Travelling	JK
BH0111	05/06/2018	6	Black-headed Gull	3	08:16:00	73			73		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
BH0112	11/06/2018	7	Black-headed Gull	3	15:09:00	127		127			GA1, (Improved agricultural grassland) Travelling	JH
BH0114	18/06/2018	8	Black-headed Gull	1	09:57:00	147	21	126			PB4, (Cutover bog) Travelling	JH
BH0116	18/06/2018	8	Black-headed Gull	2	11:20:00	131	82	49			WD4, (Conifer plantation) PB4, (Cutover bog) Travelling	JH
BH0117	18/06/2018	8	Black-headed Gull	1	13:38:00	122		91	31		PB4, (Cutover bog) Travelling	JH

Vantage Point Survey												
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BH0118	18/06/2018	8	Black-headed Gull	2	13:46:00	83		83			PB4, (Cutover bog) Travelling	JH
BH0115	18/06/2018	8	Black-headed Gull	2	10:50:00	52	10	42			PB4, (Cutover bog) Landing on wet area of PB4	JH
BH0113	18/06/2018	8	Black-headed Gull	1	08:43:00	48		48			PB4, (Cutover bog) Flying and Calling	JH
BH0119	20/06/2018	10	Black-headed Gull	2	09:48:00	44	44				PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
BH0120	20/06/2018	10	Black-headed Gull	1	10:01:00	223		46	177		PB4, (Cutover bog) Travelling	JH
BH0121	09/07/2018	5	Black-headed Gull	1	12:41:00	36	36				PB4, (Cutover bog) Landing on Flooded area of PB4	JH
BH0122	12/07/2018	9	Black-headed Gull	1	13:32:00	138			60	78	PB4, (Cutover bog) Travelling	JH
BH0123	12/07/2018	9	Black-headed Gull	3	14:02:00	50			50		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
BH0124	16/07/2018	1	Black-headed Gull	3	09:07:00	112			112		GA1, (Improved agricultural grassland) WD4, (Conifer plantation) Travelling	JH
BH0125	16/07/2018	1	Black-headed Gull	1	09:10:00	67	12	55			PB4, (Cutover bog) Landing on Flooded area of PB4	JH
BH0126	24/07/2018	8	Black-headed Gull	1	10:37:00	34	34				PB4, (Cutover bog) Travelling	JH
BH0127	13/08/2018	5	Black-headed Gull	1	10:27:00	25	25				PB4, (Cutover bog) Landing on Flooded area of PB4	JH
BH0128	07/11/2018	5	Black-headed Gull	9	11:35:00	180		100	80		PB4, (Cutover bog) travelling	TR
BH0129	12/02/2019	3	Black-headed Gull	5	12:37:00	147				147	PB4, (Cutover bog) WD4, (Conifer plantation) Travelling	JH
BH0130	01/03/2019	1	Black-headed Gull	2	07:29:00	63		63			FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Mixed broadleaved/conifer woodland Travelling	JH

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BH0131	01/03/2019	1	Black-headed Gull	1	07:51:00	115		20	95		FL2, (Acid oligotrophic lakes) PB1, (Raised bog) Travelling	JH
BH0134	01/03/2019	1	Black-headed Gull	9	08:38:00	154	20	116	18		FL2, (Acid oligotrophic lakes) PB1, (Raised bog) Travelling	JH
BH0135	01/03/2019	1	Black-headed Gull	4	08:50:00	142	20	20	102		FL2, (Acid oligotrophic lakes) Mixed broadleaved/conifer woodland PB1, (Raised bog) Travelling	JH
BH0136	01/03/2019	1	Black-headed Gull	7	10:16:00	247	40	60	147		FL2, (Acid oligotrophic lakes) PB1, (Raised bog) Travelling	JH
BH0138	01/03/2019	1	Black-headed Gull	2	10:52:00	145		50	95		FL2, (Acid oligotrophic lakes) PB1, (Raised bog) WD4, (Conifer plantation) Travelling	JH
BH0137	01/03/2019	1	Black-headed Gull	3	10:31:00	78	34	44			FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Leaving wet area of PB4	JH
BH0133	01/03/2019	1	Black-headed Gull	4	08:11:00	130	20	110			FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Leaving flooded area	JH
BH0132	01/03/2019	1	Black-headed Gull	2	08:09:00	70	10	10	50		FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Circling and Landing on FL2	JH
BH0140	04/04/2019	1	Black-headed Gull	14	15:32:49	98		98			FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Landing on wet area	JH
BH0139	04/04/2019	1	Black-headed Gull	1	14:36:06	45		45			FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Landing on flooded area	JH
BH0141	04/04/2019	1	Black-headed Gull	6	16:39:40	92		92			FL2, (Acid oligotrophic lakes) Circling Abd landing on wet area	JH
BH0146	23/04/2019	9	Black-headed Gull	2	17:15:24	270		150	50		PB4, (Cutover bog) Travelling slowly over bog	TR

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BH0148	23/04/2019	9	Black-headed Gull	2	17:49:00	180		60			PB4, (Cutover bog) Travelling	TR
BH0150	23/04/2019	9	Black-headed Gull	1	18:52:43	65		65			PB4, (Cutover bog) Travelling	TR
BH0151	23/04/2019	9	Black-headed Gull	3	20:18:27	60			60		PB4, (Cutover bog) Travelling	TR
BH0149	23/04/2019	9	Black-headed Gull	3	17:52:00	60		30	30		PB4, (Cutover bog) circling area and raveling on	TR
BH0147	23/04/2019	9	Black-headed Gull	1	17:42:02	80			80		PB4, (Cutover bog) circling area	TR
BH0142	23/04/2019	4	Black-headed Gull	1	17:31:11	32		32			PB4, (Cutover bog) Travelling	JH
BH0143	23/04/2019	4	Black-headed Gull	3	18:59:39	38		38			PB4, (Cutover bog) Travelling	JH
BH0145	23/04/2019	4	Black-headed Gull	2	19:23:03	94		94			PB4, (Cutover bog) Travelling	JH
BH0144	23/04/2019	4	Black-headed Gull	2	19:03:23	52		52			PB4, (Cutover bog) Landing onPB4	JH
BH0185	23/04/2019	4	Black-headed Gull	3	20:43:06	160		120	40		PB4, (Cutover bog) Circling and flying on	JH
BH0152	25/04/2019	8	Black-headed Gull	1	16:00:37	60		60			PB4, (Cutover bog) Travelling	TR
BH0153	25/04/2019	8	Black-headed Gull	1	17:38:04	50		50			PB4, (Cutover bog) Travelling	TR
BH0154	30/04/2019	5	Black-headed Gull	1	19:11:43	190		150			PB4, (Cutover bog) Travelling low over bog and landing above water	TR
BH0186	30/04/2019	5	Black-headed Gull	1	16:18:06	115		100			PB4, (Cutover bog) Travelling	TR
BH0155	09/05/2019	1	Black-headed Gull	1	06:55:00	140			140		PB4, (Cutover bog) travelling	TR
BH0157	09/05/2019	1	Black-headed Gull	1	07:38:30	65			65		PB4, (Cutover bog) travelling	TR
BH0156	09/05/2019	1	Black-headed Gull	2	07:26:31	210		50	100		PB4, (Cutover bog) low over wetland before travelling on	TR
BH0158	09/05/2019	1	Black-headed Gull	1	10:20:00	130		60			PB4, (Cutover bog) circling wetland	TR
BH0188	09/05/2019	9	Black-headed Gull	5	06:20:00	42			42		WN7, (Bog woodland) Travelling	JK
BH0189	09/05/2019	9	Black-headed Gull	1	10:12:00	32			32		WN7, (Bog woodland) Travelling	JK
BH0190	10/05/2019	8	Black-headed Gull	3	10:16:00	55		55			WN7, (Bog woodland) Travelling	JK
BH0191	10/05/2019	8	Black-headed Gull	2	10:31:00	43		43			WN7, (Bog woodland) Travelling	JK

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BH0170	21/05/2019	4	Black-headed Gull	2	08:55:11	50		50			PB4, (Cutover bog) travelling landing AW	TR
BH0165	21/05/2019	4	Black-headed Gull	1	07:04:23	50		30	20		PB4, (Cutover bog) travelling and landing	TR
BH0166	21/05/2019	4	Black-headed Gull	2	07:14:56	90		90			PB4, (Cutover bog) travelling	TR
BH0171	21/05/2019	4	Black-headed Gull	1	09:49:47	120		20	80		PB4, (Cutover bog) rising from wetland	TR
BH0161	21/05/2019	4	Black-headed Gull	3	06:15:35	20		10			PB4, (Cutover bog) landing AW	TR
BH0163	21/05/2019	4	Black-headed Gull	1	06:36:41	10					PB4, (Cutover bog) landing AW	TR
BH0164	21/05/2019	4	Black-headed Gull	3	06:40:17	45		30			PB4, (Cutover bog) landing AW	TR
BH0173	21/05/2019	4	Black-headed Gull	4	10:28:27	390		100	250		PB4, (Cutover bog) circling wetland alarming	TR
BH0162	21/05/2019	4	Black-headed Gull	3	06:33:59	360		300	30		PB4, (Cutover bog) circling wet area calling and interacting	TR
BH0174	21/05/2019	4	Black-headed Gull	1	10:42:57	150		30	100		PB4, (Cutover bog) circling calling	TR
BH0167	21/05/2019	4	Black-headed Gull	5	08:12:52	400		150	220		PB4, (Cutover bog) circling area, mobbing HC	TR
BH0159	21/05/2019	4	Black-headed Gull	1	05:07:12	60					PB4, (Cutover bog) circling area, 2-3 bh calling on ground	TR
BH0172	21/05/2019	4	Black-headed Gull	5	10:20:11	300		60	240		PB4, (Cutover bog) circling area	TR
BH0160	21/05/2019	4	Black-headed Gull	1	05:37:33	40					PB4, (Cutover bog) calling and landing	TR
BH0169	21/05/2019	4	Black-headed Gull	2	08:29:42	140		100			PB4, (Cutover bog) calling	TR
BH0168	21/05/2019	4	Black-headed Gull	1	08:19:59	90		30	60		PB4, (Cutover bog) alarming	TR
BH0192	22/05/2019	5	Black-headed Gull	2	07:20:00	57		57			GA1, (Improved agricultural grassland) WN7, (Bog woodland)	JK
BH0193	22/05/2019	5	Black-headed Gull	2	07:31:00	62		62			WN7, (Bog woodland)	JK

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BH0194	22/05/2019	5	Black-headed Gull	1	09:50:00	43			43		WN7, (Bog woodland)	JK
BH0195	24/05/2019	10	Black-headed Gull	5	08:42:00	72			72		PB4, (Cutover bog) WN7, (Bog woodland)	JK
BH0196	24/05/2019	10	Black-headed Gull	2	09:10:00	58			58		PB4, (Cutover bog) WN7, (Bog woodland)	JK
BH0197	03/06/2019	4	Black-headed Gull	2	10:22:00	52			52		WN7, (Bog woodland) PB4, (Cutover bog) Travelling	JK
BH0198	03/06/2019	4	Black-headed Gull	2	11:09:00	48			48		WN7, (Bog woodland) PB4, (Cutover bog) Travelling	JK
BH0175	06/06/2019	1	Black-headed Gull	2	11:15:44	48		48			FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Landing on FL2	JH
BH0176	10/06/2019	2	Black-headed Gull	2	10:29:04	54		54			PB4, (Cutover bog) WD4, (Conifer plantation) Travelling	JH
BH0199	17/06/2019	7	Black-headed Gull	4	11:25:00	37		37			WN7, (Bog woodland) PB4, (Cutover bog) Travelling	JK
BH0200	17/06/2019	7	Black-headed Gull	2	11:32:00	42		42			WN7, (Bog woodland) PB4, (Cutover bog) Travelling	JK
BH0201	17/06/2019	7	Black-headed Gull	3	11:45:00	28		28			WN7, (Bog woodland) PB4, (Cutover bog) Travelling	JK
BH0202	17/06/2019	7	Black-headed Gull	4	13:58:00	43			43		WN7, (Bog woodland) PB4, (Cutover bog) Travelling	JK
BH0203	25/06/2019	10	Black-headed Gull	35	14:25:00	308			308		PB4, (Cutover bog) Soaring	JK
BH0204	25/06/2019	10	Black-headed Gull	18	14:50:00	211			211		PB4, (Cutover bog) Soaring	JK
BH0210	26/06/2019	8	Black-headed Gull	2	14:52:00	57			57		WN7, (Bog woodland) PB4, (Cutover bog) Travelling	JK
BH0205	26/06/2019	8	Black-headed Gull	7	10:16:00	84			84		WN7, (Bog woodland) PB4, (Cutover bog) Soaring	JK
BH0206	26/06/2019	8	Black-headed Gull	12	11:08:00	72			72		WN7, (Bog woodland) PB4, (Cutover bog) Soaring	JK

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BH0207	26/06/2019	8	Black-headed Gull	5	11:49:00	93			93		WN7, (Bog woodland) PB4, (Cutover bog) Soaring	JK
BH0208	26/06/2019	8	Black-headed Gull	8	12:22:00	67			67		WN7, (Bog woodland) PB4, (Cutover bog) Soaring	JK
BH0209	26/06/2019	8	Black-headed Gull	3	12:36:00	74			74		WN7, (Bog woodland) PB4, (Cutover bog) Soaring	JK
BH0178	02/07/2019	6	Black-headed Gull	2	11:30:56	90		90			GA1, (Improved agricultural grassland) Travelling	JH
BH0179	02/07/2019	6	Black-headed Gull	1	13:04:17	32		32			GA1, (Improved agricultural grassland) Travelling	JH
BH0180	02/07/2019	6	Black-headed Gull	1	14:11:10	72		72			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Landing in GA1	JH
BH0177	02/07/2019	6	Black-headed Gull	7	10:21:14	219			219		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Circling flight	JH
BH0182	03/07/2019	1	Black-headed Gull	2	09:50:14	127		28	99		PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) GA1, (Improved agricultural grassland) Travelling	JH
BH0181	03/07/2019	1	Black-headed Gull	3	08:53:52	58		58			PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Landing on flooded area	JH
BH0183	08/07/2019	5	Black-headed Gull	1	12:48:26	85		85			GA1, (Improved agricultural grassland) Landing in GA1	JH
BH0184	10/07/2019	9	Black-headed Gull	1	13:28:31	147		147			PB4, (Cutover bog) Travelling	JH
BH0187	07/08/2019	9	Black-headed Gull	4	17:40:33	135		135			PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Landing on Drinagh Wetland	JH

Breeding Bird Survey							
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity	Comments	Surveyor
BH001	06/04/2018		Black-headed Gull	3	PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling in a westerly direction		JH
BH002	09/04/2018		Black-headed Gull	2	PB4, (Cutover bog) Roosting on flooded area of PB4		JH
BH003	10/04/2018		Black-headed Gull	20	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Roosting on flooded area		JH
BH004	12/04/2018		Black-headed Gull	2	GA1, (Improved agricultural grassland) WD4, (Conifer plantation) Travelling	Flying in a westerly direction towards flooded area on site	JH
BH005	01/05/2018		Black-headed Gull	1	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Roosting	Roosting on flooded area.	JH
BH006	01/05/2018		Black-headed Gull	2	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Travelling	Flying in a westerly direction.	JH
BH007	01/05/2018		Black-headed Gull	1	PB4, (Cutover bog) Travelling	Flying in a westerly direction	JH
BH008	02/05/2018		Black-headed Gull	1	PB4, (Cutover bog) Travelling	In height band 2 for 18 seconds	JH
BH009	02/05/2018		Black-headed Gull	300	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Gull Colony	Approximately 300 BH on wet area of the cutaway- establishing breeding territories	JH
BH010	02/05/2018		Black-headed Gull	2	PB4, (Cutover bog) Travelling	In height band 2 for 36 seconds - flying westerly	JH
BH011	02/05/2018		Black-headed Gull	5	PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	In height band 2 for 24 seconds - flying easterly in direction	JH
BH012	04/05/2018		Black-headed Gull	4	PB4, (Cutover bog) Travelling	In height band 3 for 38 seconds - flying westerly in direction	JH
BH013	04/05/2018		Black-headed Gull	3	PB4, (Cutover bog) Travelling	Travelling in height band 2 for 52 seconds - heading easterly in direction	JH
BH014	04/05/2018		Black-headed Gull	9	PB4, (Cutover bog) Travelling	In height band 2 for 44 seconds - heading easterly in direction	JH
BH015	04/05/2018		Black-headed Gull	2	PB4, (Cutover bog) FW4, (Drainage ditches) Travelling	In height band 3 for 34 seconds - heading south easterly in direction	JH
BH016	18/05/2018		Black-headed Gull	1	PB4, (Cutover bog) Travelling	In height band 2 for 38 seconds - flying west in direction	JH

Breeding Bird Survey							
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity	Comments	Surveyor
BH017	24/05/2018		Black-headed Gull	3	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Flying and Calling	Landing on flooded area	JH
BH018	24/05/2018		Black-headed Gull	2	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Landing on flooded area	Landing on flooded area	JH
BH019	24/05/2018		Black-headed Gull	10	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Flying and landing on flooded area	Disturbed by observer	JH
BH020	06/06/2018	05:36:00	Black-headed Gull	1	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Roosting on wet area of PB4		JH
BH021	06/06/2018	09:58:00	Black-headed Gull	1	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Flushed by observer from wet area of PB4		JH
BH022	07/06/2018	06:56:00	Black-headed Gull	4	Flying and calling		JH
BH023	07/06/2018	08:01:00	Black-headed Gull	2	Travelling		JH
BH024	13/06/2018	08:51:00	Black-headed Gull	2	Travelling		JH
BH025	13/06/2018	10:34:00	Black-headed Gull	2	Travelling		JH
BH026	15/06/2018	05:51:00	Black-headed Gull	7	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Roosting on wet area of PB4		JH
BH027	21/06/2018	06:53:00	Black-headed Gull	40	On large flooded area close to the road		JH
BH028	09/04/2019	09:04:23	Black-headed Gull	1	PB4, (Cutover bog) Travelling		JH
BH029	10/04/2019	09:59:57	Black-headed Gull	3	PB4, (Cutover bog) Harassing Lapwing		JH
BH030	12/04/2019	12:06:40	Black-headed Gull	60	GA1, (Improved agricultural grassland) Foraging		JH
BH031	03/05/2019	10:13:01	Black-headed Gull	2	FL2, (Acid oligotrophic lakes)		JH
BH032	03/05/2019	10:52:13	Black-headed Gull	5	FL2, (Acid oligotrophic lakes) PB4, (Cutover bog)		JH
BH033	08/05/2019	14:22:52	Black-headed Gull	2	PB4, (Cutover bog) WD4, (Conifer plantation)		JH
BH034	08/05/2019	14:32:50	Black-headed Gull	2	WD4, (Conifer plantation) PB4, (Cutover bog)		JH
BH035	14/05/2019	04:55:11	Black-headed Gull	2	PB4, (Cutover bog) Disturbed by observer		JH

Breeding Bird Survey							
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity	Comments	Surveyor
BH036	14/05/2019	04:59:04	Black-headed Gull	2	PB4, (Cutover bog)		JH
BH037	14/05/2019	08:48:20	Black-headed Gull	2	PB4, (Cutover bog) WD4, (Conifer plantation) in height band 2. Flying NE across site		JH
BH038	17/05/2019	13:38:55	Black-headed Gull	3	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes)		JH
BH039	07/06/2019	10:02:13	Black-headed Gull	2	FL2, (Acid oligotrophic lakes) Roosting on island		JH
BH040	11/06/2019	08:01:57	Black-headed Gull	1	PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling East		JH
BH041	12/06/2019	04:43:27	Black-headed Gull	2	PB4, (Cutover bog) Flying and calling		JH
BH042	12/06/2019	09:28:01	Black-headed Gull	1	PB4, (Cutover bog) WD4, (Conifer plantation) Travelling		JH
BH043	13/06/2019	09:26:18	Black-headed Gull	3	FL2, (Acid oligotrophic lakes) Flying and calling		JH
BH044	18/06/2019	04:21:06	Black-headed Gull	11	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Flying and calling		JH
BH045	01/07/2019	10:00:06	Black-headed Gull	2	FL2, (Acid oligotrophic lakes)		JH
BH046	01/07/2019	10:20:51	Black-headed Gull	3	FL2, (Acid oligotrophic lakes) 3 Juvenile birds		JH
BH047	01/07/2019	10:34:26	Black-headed Gull	14	FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) in band 2		JH
BH048	01/07/2019	12:21:17	Black-headed Gull	12	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes)		JH
BH049	17/07/2019	10:03:24	Black-headed Gull	1	PB4, (Cutover bog)		JH

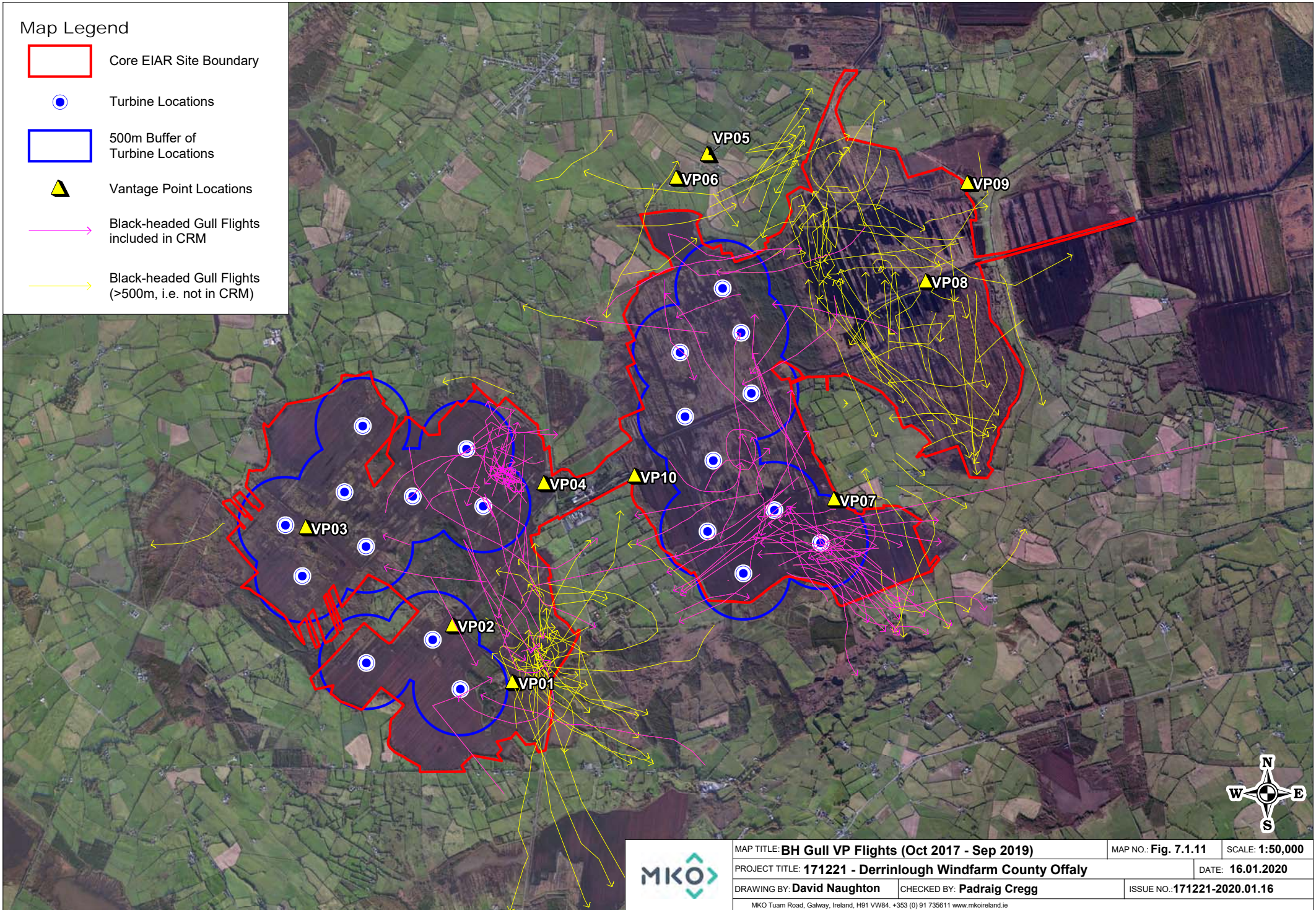
Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
BH001	25/02/2019		Black-headed Gull	2			JH

Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
BH002	28/03/2019		Black-headed Gull	8			JH
BH003	28/03/2019		Black-headed Gull	2			JH
BH004	28/03/2019		Black-headed Gull	2		Noggus Bog	JH
BH005	28/03/2019		Black-headed Gull	6		Noggus Bog	JH
BH006	29/04/2019	11:47:11	Black-headed Gull	120	Roosting	FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Roosting on islands of flooded cutover bog	JH
BH007	29/04/2019	11:49:43	Black-headed Gull	120	Roosting	FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Roosting on islands of flooded cutover bog	JH
BH008	29/04/2019	12:16:50	Black-headed Gull	4	Roosting	FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Roosting	JH
BH009	03/05/2019	08:18:47	Black-headed Gull	5		Flying and landing on flooded area of cutover bog	JH
BH010	03/05/2019	08:34:16	Black-headed Gull	7	Roosting at edge of flooded area	FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Roosting at edge of flooded area	JH
BH011	03/05/2019	12:55:45	Black-headed Gull	150	Roosting	FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Breeding Gull Colony roosting	JH
BH012	03/05/2019	13:05:12	Black-headed Gull	30	Roosting	FL2, (Acid oligotrophic lakes)	JH
BH013	23/05/2019	10:38:59	Black-headed Gull	60	Roosting on island area	FL2, (Acid oligotrophic lakes) Incubating colony	JH
BH014	23/05/2019	10:47:19	Black-headed Gull	80	Roosting on flooded area	FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Roosting on flooded area	JH

Migratory Bird Survey												
Map 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 (25-180m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BH01	18/10/2018	CMVP1	Black-headed Gull	7	08:42:00	26			26		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Commuting	JH
BH02	21/01/2019	CMVP1	Black-headed Gull	70	08:39:00	74		74			GA1, (Improved agricultural grassland) WD4, (Conifer plantation) Travelling	JH
BH03	21/01/2019	CMVP1	Black-headed Gull	5	09:11:00	92		92			GA1, (Improved agricultural grassland) Travelling	JH
BH04	21/02/2019	CMVP2	Black-headed Gull	8	08:24:00	76		76			FW2, (Depositing/upland rivers) GA1, (Improved agricultural grassland) Travelling	JH
BH05	26/02/2019	CMVP4	Black-headed Gull	16	07:40:00	97		97			FW2, (Depositing/upland rivers) GA1, (Improved agricultural grassland) Travelling	JH
BH06	26/02/2019	CMVP4	Black-headed Gull	25	08:05:00	84			84		FW2, (Depositing/upland rivers) GA1, (Improved agricultural grassland) Travelling	JH
BH07	06/08/2019	CMVP3	Black-headed Gull	10	20:23:07	125			125		Travelling	TR

Map Legend

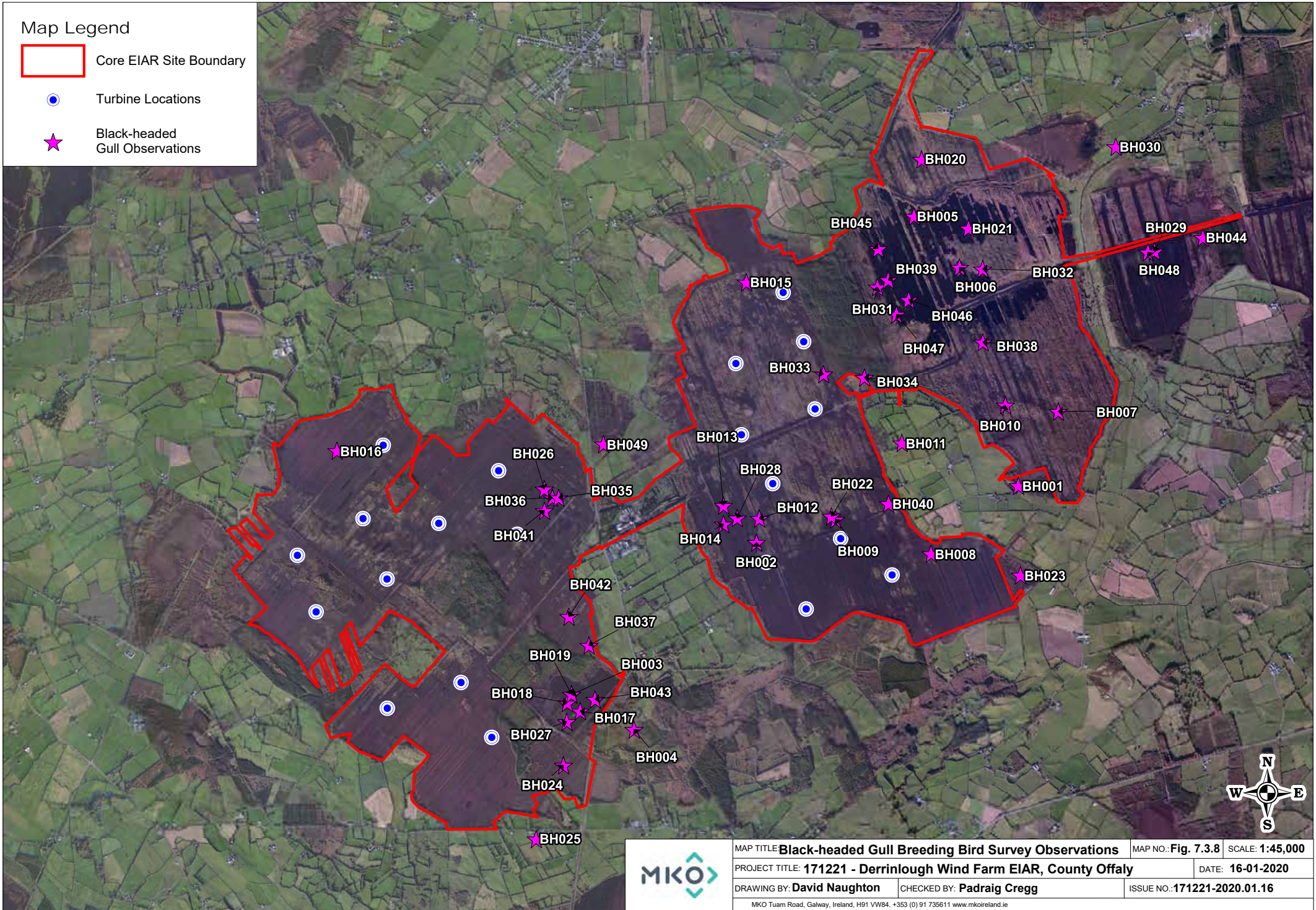
- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ Vantage Point Locations
- Black-headed Gull Flights included in CRM
- Black-headed Gull Flights (>500m, i.e. not in CRM)



	MAP TITLE: BH Gull VP Flights (Oct 2017 - Sep 2019)		MAP NO.: Fig. 7.1.11	SCALE: 1:50,000
	PROJECT TITLE: 171221 - Derrinlough Windfarm County Offaly			DATE: 16.01.2020
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16	
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie			







Map Legend

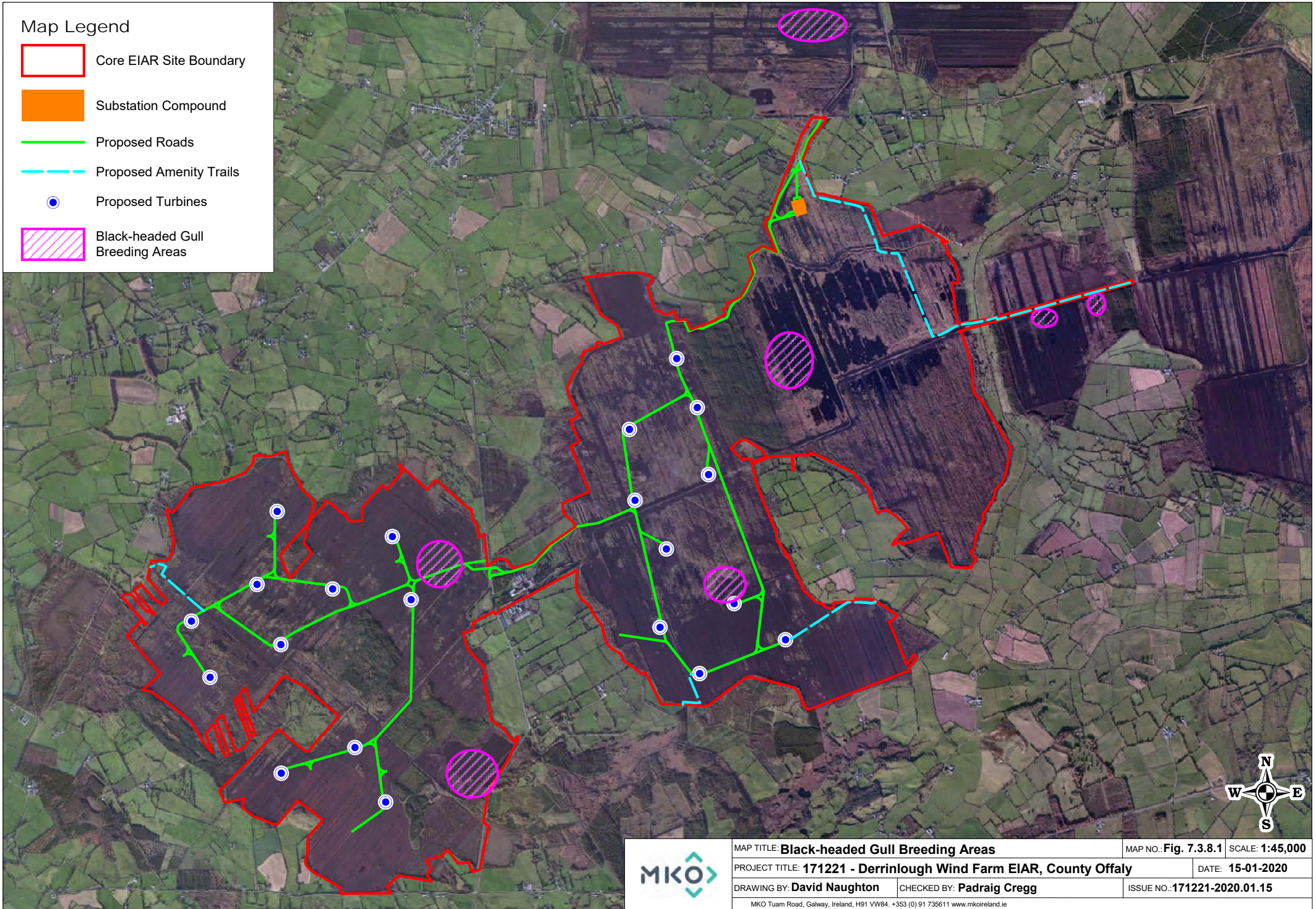
- Core EIAR Site Boundary
- Turbine Locations
- ★ Black-headed Gull Observations



	MAP TITLE: Black-headed Gull Breeding Bird Survey Observations	MAP NO.: Fig. 7.3.8	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly		DATE: 16-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16	
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie			

Map Legend

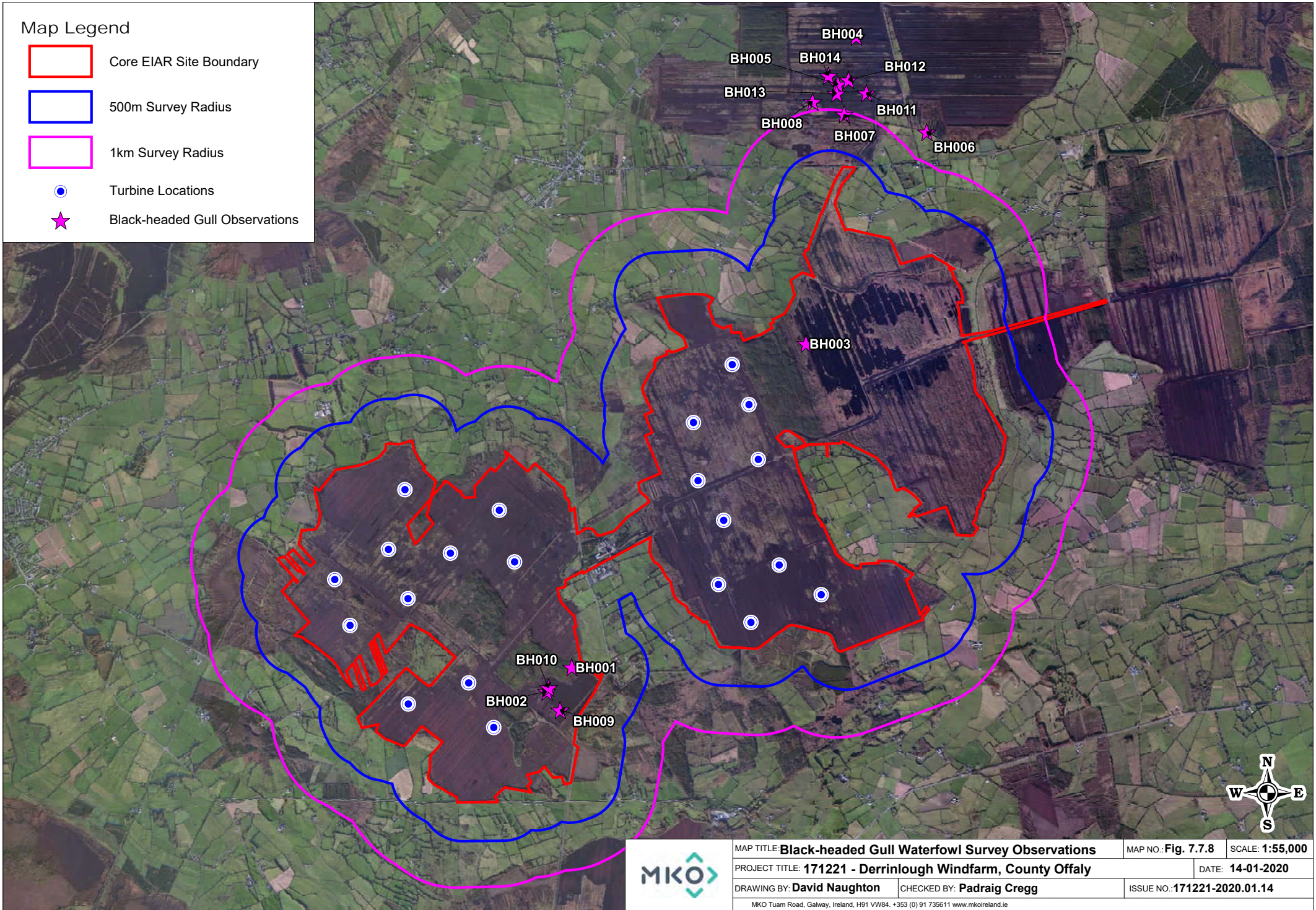
-  Core EIAR Site Boundary
-  Substation Compound
-  Proposed Roads
-  Proposed Amenity Trails
-  Proposed Turbines
-  Black-headed Gull Breeding Areas



	MAP TITLE: Black-headed Gull Breeding Areas	MAP NO.: Fig. 7.3.8.1	SCALE: 1:45,000
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly	DATE: 15-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.15
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Map Legend

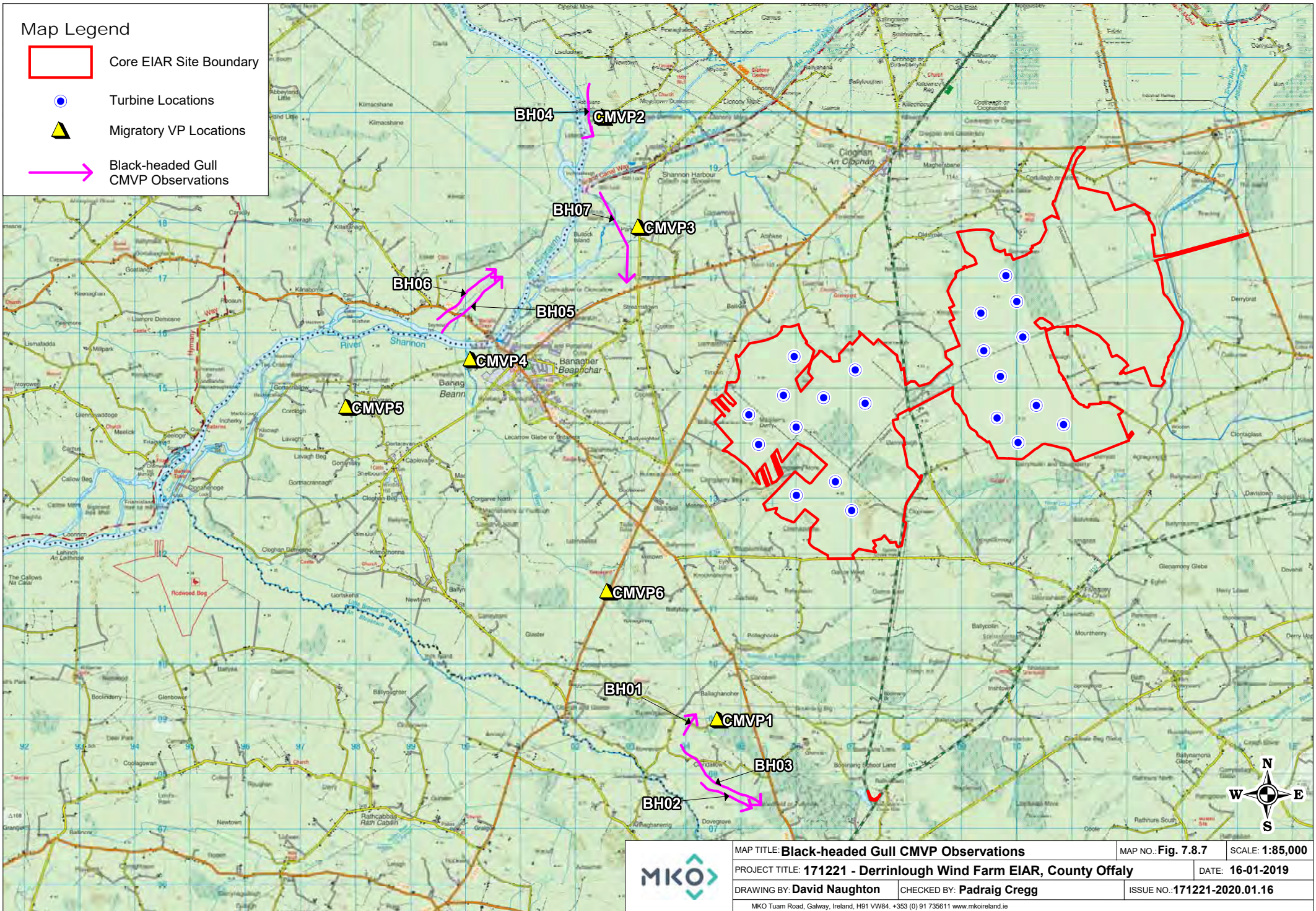
- Core EIAR Site Boundary
- 500m Survey Radius
- 1km Survey Radius
- Turbine Locations
- ★ Black-headed Gull Observations



	MAP TITLE: Black-headed Gull Waterfowl Survey Observations		MAP NO.: Fig. 7.7.8	SCALE: 1:55,000	
	PROJECT TITLE: 171221 - Derrinlough Windfarm, County Offaly			DATE: 14-01-2020	
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.14
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Map Legend

- Core EIAR Site Boundary
- Turbine Locations
- ▲ Migratory VP Locations
- Black-headed Gull CMVP Observations



MAP TITLE: Black-headed Gull CMVP Observations		MAP NO.: Fig. 7.8.7	SCALE: 1:85,000
PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly			DATE: 16-01-2019
DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg	
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Table 12 Herring Gull

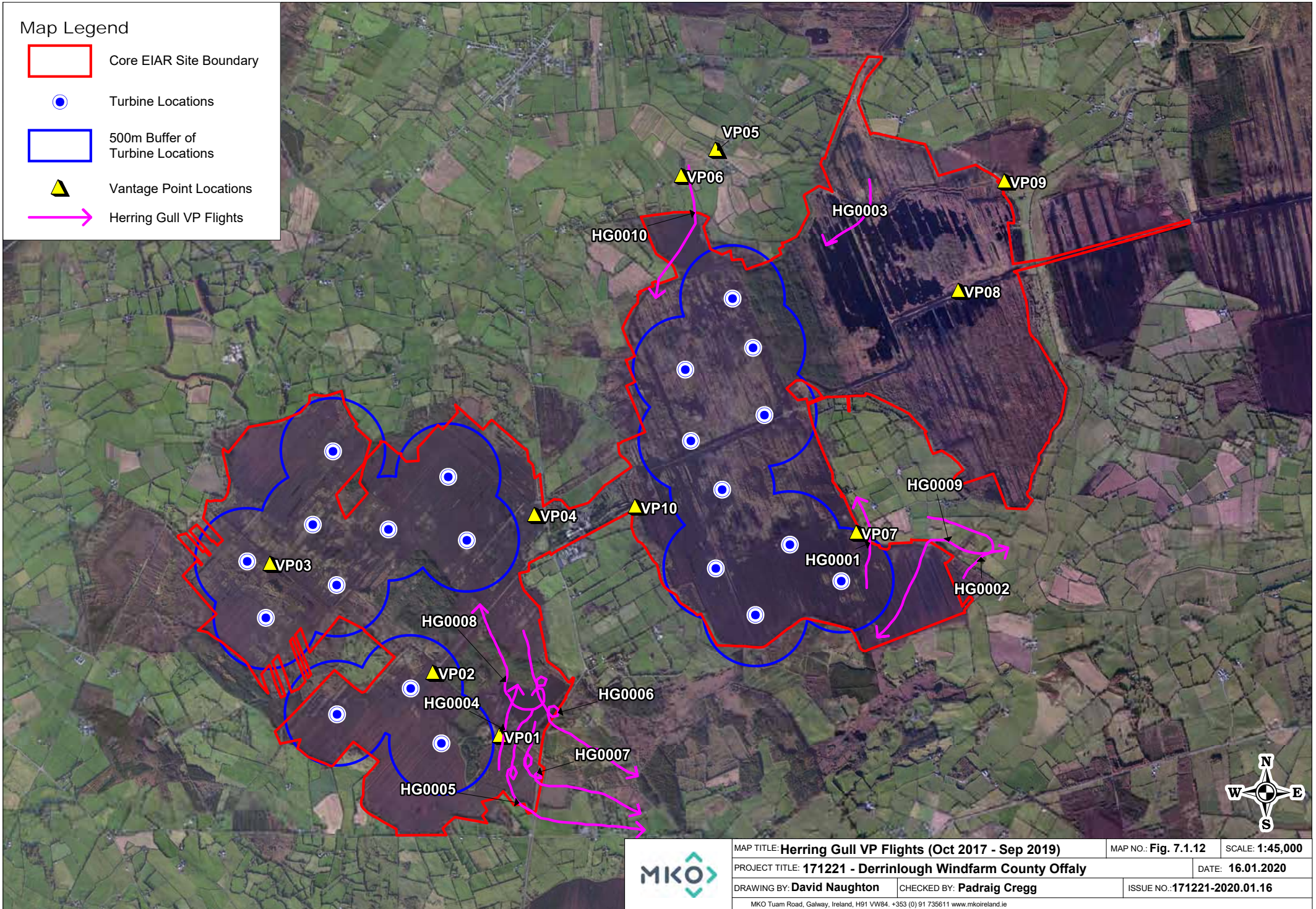
Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
HG0001	11/07/2018	7	Herring Gull	5	14:17:00	215				215	PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
HG0002	11/07/2018	7	Herring Gull	2	15:12:00	50			50		GA1, (Improved agricultural grassland) Travelling	JH
HG0003	12/07/2018	9	Herring Gull	2	11:56:00	157				157	PB4, (Cutover bog) Travelling	JH
HG0005	16/07/2018	1	Herring Gull	4	10:42:00	186		30	156		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
HG0006	16/07/2018	1	Herring Gull	2	13:19:00	270			90	180	PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
HG0007	16/07/2018	1	Herring Gull	2	13:50:00	208			62	146	PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
HG0004	16/07/2018	1	Herring Gull	1	10:06:00	48	10	38			PB4, (Cutover bog) Landing on Flooded area of PB4	JH
HG0008	01/08/2018	1	Herring Gull	1	13:33:00	148	25	123			PB4, (Cutover bog) WD4, (Conifer plantation) Circling and flying on	JH
HG0009	20/08/2018	7	Herring Gull	1	10:42:00	273		172	101		GA1, (Improved agricultural grassland) PB4, (Cutover bog) Travelling	JH
HG0010	23/11/2018	5	Herring Gull	1	09:30:00	40	40				GA1, (Improved agricultural grassland)	TR

Breeding Bird Survey							
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity	Comments	Surveyor
HG001	04/05/2018		Herring Gull	3	PB4, (Cutover bog) Travelling	In height band 3 for 58 seconds - heading westerly in direction	JH

Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
HG001	28/03/2019		Herring Gull	2		Travelling over in flight	JH




Map Legend

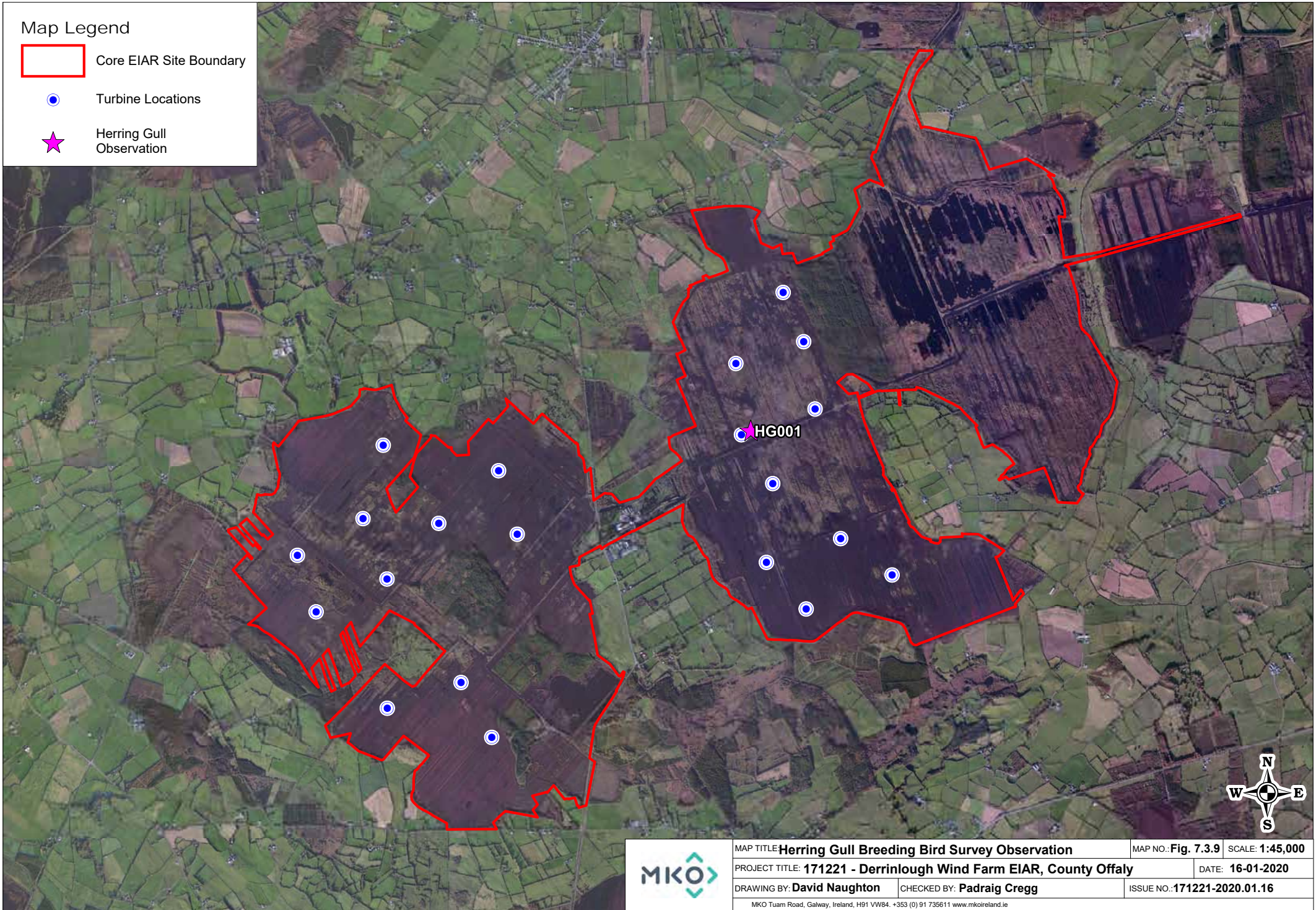
- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ Vantage Point Locations
- Herring Gull VP Flights



	MAP TITLE: Herring Gull VP Flights (Oct 2017 - Sep 2019)		MAP NO.: Fig. 7.1.12	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Windfarm County Offaly			DATE: 16.01.2020	
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.16
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Map Legend

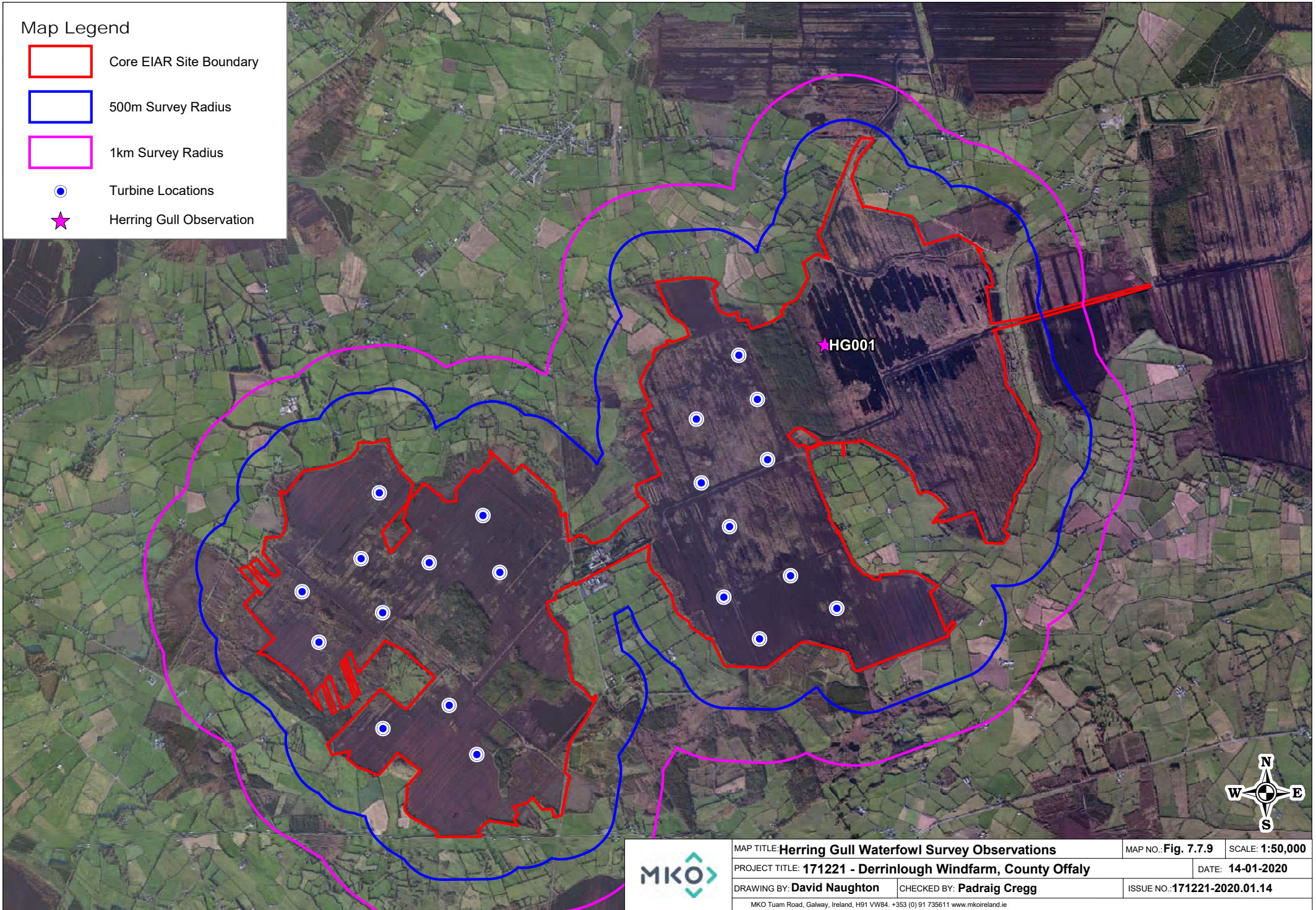
-  Core EIAR Site Boundary
-  Turbine Locations
-  Herring Gull Observation



MAP TITLE: Herring Gull Breeding Bird Survey Observation	MAP NO.: Fig. 7.3.9	SCALE: 1:45,000
PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly	DATE: 16-01-2020	
DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16
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Map Legend

-  Core EIAR Site Boundary
-  500m Survey Radius
-  1km Survey Radius
-  Turbine Locations
-  Herring Gull Observation



MAP TITLE: Herring Gull Waterfowl Survey Observations	MAP NO.: Fig. 7.7.9	SCALE: 1:50,000
PROJECT TITLE: 171221 - Derrinlough Windfarm, County Offaly	DATE: 14-01-2020	
DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.14
<small>MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie</small>		



Table 13 Woodcock Survey Data

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
WK0030	22/12/2017	2	Woodcock	1	17:15:00						Flushed along access track	JA
WK0001	03/05/2018	9	Woodcock	1	21:20:00	160		160			PB4, (Cutover bog) Travelling	JH
WK0002	08/05/2018	3	Woodcock	2	21:10:00	80		80			PB4, (Cutover bog) Roding Woodcock	JH
WK0004	08/05/2018	3	Woodcock	1	21:20:00	44		44			PB4, (Cutover bog) Roding Woodcock	JH
WK0005	08/05/2018	3	Woodcock	1	21:27:00	30		30			PB4, (Cutover bog) Roding Woodcock	JH
WK0003	08/05/2018	3	Woodcock	2	21:14:00	52		52			PB4, (Cutover bog) Roding Woodcock	JH
WK0006	08/05/2018	3	Woodcock	1	21:32:00	62		62			PB4, (Cutover bog) Roding Woodcock	JH
WK0007	08/05/2018	3	Woodcock	2	21:40:00	27		27			PB4, (Cutover bog) Roding Woodcock	JH
WK0008	23/05/2018	8	Woodcock	1	21:20:00	54		54			PB4, (Cutover bog) Roding Woodcock	JH
WK0009	23/05/2018	8	Woodcock	1	21:34:00	37		37			PB4, (Cutover bog) Roding Woodcock	JH
WK0010	23/05/2018	8	Woodcock	2	21:38:00	24		24			PB4, (Cutover bog) Roding Woodcock	JH
WK0011	23/05/2018	8	Woodcock	1	21:41:00	33		33			PB4, (Cutover bog) Roding Woodcock	JH
WK0012	23/05/2018	8	Woodcock	1	21:44:00	67		67			PB4, (Cutover bog) Roding Woodcock	JH
WK0013	23/05/2018	8	Woodcock	1	21:48:00	30		30			PB4, (Cutover bog) Roding Woodcock	JH
WK0014	23/05/2018	8	Woodcock	2	22:12:00	26		26			PB4, (Cutover bog) Roding Woodcock	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
WK0015	31/05/2018	4	Woodcock	1	22:24:00	30		30			PB4, (Cutover bog) Travelling	JH
WK0016	19/12/2018	10	Woodcock	1	07:50:00	5	5				PB4, (Cutover bog) travelling	TR
WK0017	07/02/2019	4	Woodcock	1	17:56:00	20	20				PB4, (Cutover bog) Travelling	JH
WK0018	11/04/2019	2	Woodcock	1	20:39:30	25		25			PB4, (Cutover bog) WD4, (Conifer plantation) Travelling	JH
WK0019	16/04/2019	3	Woodcock	1	21:03:11	30		30			PB4, (Cutover bog) Roding Woodcock	JH
WK0020	18/04/2019	10	Woodcock	1	21:02:04	30		30			PB4, (Cutover bog) Travelling/Roding	JH
WK0021	18/04/2019	10	Woodcock	1	21:08:53	50		50			PB4, (Cutover bog) Roding WK	JH
WK0022	18/04/2019	10	Woodcock	1	21:16:10	25		25			PB4, (Cutover bog) Roding WK	JH
WK0023	23/04/2019	9	Woodcock	1	21:05:00	90		90			PB4, (Cutover bog) Roding behaviour-no calls heard	TR
WK0025	23/04/2019	9	Woodcock	1	21:18:00	100		100			PB4, (Cutover bog) Roding behaviour-no calling heard	TR
WK0026	23/04/2019	9	Woodcock	1	21:25:00	60		60			PB4, (Cutover bog) Roding behaviour-no calling heard	TR
WK0024	23/04/2019	9	Woodcock	2	21:15:00	10		10			PB4, (Cutover bog) flying together briefly	TR
WK0028	25/04/2019	8	Woodcock	1	21:02:19	660		660			PB4, (Cutover bog) Roding call heard	TR
WK0027	25/04/2019	8	Woodcock	2	20:48:22	550		550			PB4, (Cutover bog) Roding behaviour-no calling heard	TR
WK0029	16/05/2019	3	Woodcock	1	05:23:55	15		15			PB4, (Cutover bog) Roding- seen and heard	TR



Breeding Bird Survey								
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity		Comments	Surveyor
WK001	01/05/2018		Woodcock	1	PB4, (Cutover bog)	Flying	Flushed from cover by observer	JH
WK002	11/06/2019	08:46:42	Woodcock	1	PB4, (Cutover bog)	Flying		JH

Breeding Woodcock Survey								
Map Ref.	Date	Species	No. of Birds	Time of flight	Duration of flight (s)	Notes on habitat and activity	Comments	Surveyor
WK01	05/06/2018	Woodcock					18 x flights of woodcock.	JK
WK02	28/06/2018	Woodcock					11 x flights of Woodcock	JK
WK03	23/05/2019	Woodcock	1	22:18:00		PB4, (Cutover bog) WN7, (Bog woodland)		JK
WK04	23/05/2019	Woodcock	1	22:18:00		PB4, (Cutover bog) WN7, (Bog woodland)		JK
WK05	23/05/2019	Woodcock	3	22:18:00		PB4, (Cutover bog) WN7, (Bog woodland)		JK
WK06	23/05/2019	Woodcock	1	22:18:00		PB4, (Cutover bog) WN7, (Bog woodland)		JK
WK07	23/05/2019	Woodcock	1	22:18:00		PB4, (Cutover bog) WN7, (Bog woodland)		JK
WK08	23/05/2019	Woodcock	1	22:18:00		PB4, (Cutover bog) WN7, (Bog woodland)		JK
WK09	23/05/2019	Woodcock	2	22:18:00		PB4, (Cutover bog) WN7, (Bog woodland)	Pair	JK
WK10	23/05/2019	Woodcock	1	22:18:00		PB4, (Cutover bog) WN7, (Bog woodland)		JK
WK11	23/05/2019	Woodcock	1	22:18:00		PB4, (Cutover bog) WN7, (Bog woodland)		JK
WK12	23/05/2019	Woodcock	1	22:18:00		PB4, (Cutover bog) WN7, (Bog woodland)		JK
WK13	23/05/2019	Woodcock	1	22:18:00		PB4, (Cutover bog) WN7, (Bog woodland)		JK
WK14	23/05/2019	Woodcock	1	22:18:00		PB4, (Cutover bog) WN7, (Bog woodland)		JK
WK15	30/05/2019	Woodcock	2	21:45:00		PB4, (Cutover bog) WN7, (Bog woodland)	Pair	JK
WK16	30/05/2019	Woodcock	1	21:50:00		PB4, (Cutover bog) WN7, (Bog woodland)	Male	JK



Breeding Woodcock Survey								
Map Ref.	Date	Species	No. of Birds	Time of flight	Duration of flight (s)	Notes on habitat and activity	Comments	Surveyor
WK17	30/05/2019	Woodcock	1	22:06:00		PB4, (Cutover bog) WN7, (Bog woodland)	Male	JK
WK18	30/05/2019	Woodcock	1	22:18:00		PB4, (Cutover bog) WN7, (Bog woodland)	Male	JK
WK19	30/05/2019	Woodcock	2	22:18:00		PB4, (Cutover bog) WN7, (Bog woodland)	Pair	JK
WK20	06/06/2019	Woodcock	1	21:57:00		WD4, (Conifer plantation) PB4, (Cutover bog) Roding		JH
WK21	06/06/2019	Woodcock	1	22:01:00		WD4, (Conifer plantation) PB4, (Cutover bog) Roding		JH
WK22	06/06/2019	Woodcock	1	22:04:00		PB4, (Cutover bog) WD4, (Conifer plantation) Roding		JH
WK23	06/06/2019	Woodcock	1	22:08:00		WD4, (Conifer plantation) PB4, (Cutover bog) Roding		JH
WK24	06/06/2019	Woodcock	2	22:13:00		PB4, (Cutover bog) WD4, (Conifer plantation) Roding	2 males interacting	JH
WK25	06/06/2019	Woodcock	1	22:15:00		WD4, (Conifer plantation) PB4, (Cutover bog) Roding		JH
WK26	06/06/2019	Woodcock	1	22:25:00		WD4, (Conifer plantation) PB4, (Cutover bog) Roding		JH
WK27	06/06/2019	Woodcock	1	22:28:00		WD4, (Conifer plantation) PB4, (Cutover bog) Roding		JH
WK28	06/06/2019	Woodcock	1	22:40:00		WD4, (Conifer plantation) PB4, (Cutover bog) Roding		JH
WK29	06/06/2019	Woodcock	1	22:46:00		WD4, (Conifer plantation) PB4, (Cutover bog) Roding		JH
WK30	18/06/2019	Woodcock	1	22:29:00		WD4, (Conifer plantation) PB4, (Cutover bog) Roding		JH
WK31	18/06/2019	Woodcock	1	21:58:00		WD4, (Conifer plantation) PB4, (Cutover bog) Roding flight		JH
WK32	18/06/2019	Woodcock	1	22:02:00		WD4, (Conifer plantation) Roding flight		JH



Breeding Woodcock Survey								
Map Ref.	Date	Species	No. of Birds	Time of flight	Duration of flight (s)	Notes on habitat and activity	Comments	Surveyor
WK33	18/06/2019	Woodcock	1	22:07:00		WD4, (Conifer plantation) PB4, (Cutover bog) Roding flight		JH
WK34	18/06/2019	Woodcock	1	22:27:00		WD4, (Conifer plantation) PB4, (Cutover bog) Roding flight		JH
WK35	18/06/2019	Woodcock	1	22:36:00		WD4, (Conifer plantation) PB4, (Cutover bog) Roding flight		JH
WK36	18/06/2019	Woodcock	1	22:56:00		WD4, (Conifer plantation) PB4, (Cutover bog) Roding flight		JH
WK37	25/06/2019	Woodcock	1	22:08:00	36	WN7, (Bog woodland) PB4, (Cutover bog)		JK
WK38	25/06/2019	Woodcock	3	22:14:00	28	WN7, (Bog woodland) PB4, (Cutover bog)		JK
WK39	25/06/2019	Woodcock	1	22:35:00	41	WN7, (Bog woodland) PB4, (Cutover bog)		JK
WK40	27/06/2019	Woodcock	1	22:05:00	18	WN7, (Bog woodland) PB4, (Cutover bog)		JK
WK41	27/06/2019	Woodcock	1	22:18:00	22	WN7, (Bog woodland) PB4, (Cutover bog)		JK
WK42	27/06/2019	Woodcock	2	22:31:00	34	WN7, (Bog woodland) PB4, (Cutover bog)		JK
WK43	27/06/2019	Woodcock	1	22:43:00	29	WN7, (Bog woodland) PB4, (Cutover bog)		JK
WK44	27/06/2019	Woodcock	1	22:47:00	14	WN7, (Bog woodland) PB4, (Cutover bog)		JK

Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
WK001	02/01/2019	10:57:00	Woodcock	1		PB4, (Cutover bog) WS1, (Scrub) Flushed by observer	JH
WK002	02/01/2019	14:37:00	Woodcock	1		PB4, (Cutover bog) WS1, (Scrub) Flushed by observer	JH
WK003	15/01/2019	11:48:00	Woodcock	1		PB4, (Cutover bog) WD4, (Conifer plantation) Flushed by observer	JH

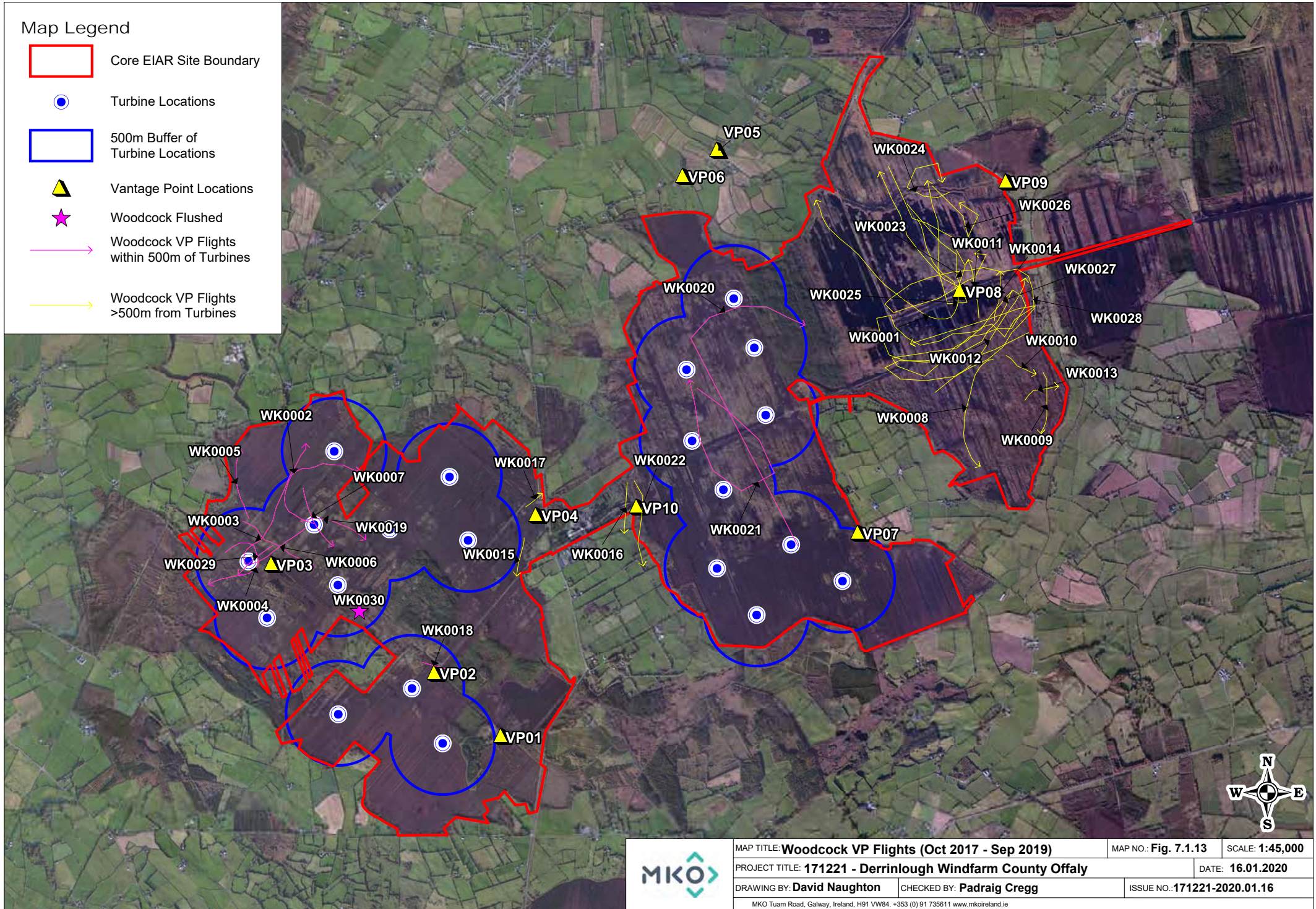


Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
WK004	17/01/2019	11:55:00	Woodcock	1		PB4, (Cutover bog) WD4, (Conifer plantation) Flushed by observer	JH
WK005	06/02/2019	09:38:00	Woodcock	1		Flushed by observer	JH
WK006	05/03/2019	10:49:00	Woodcock	1		Flushed from cover by observer	JH
WK007	14/03/2019	09:34:00	Woodcock	1		Flushed by observer	JH

Incidental Observations							
Date	Survey Type	Location	Species	No. of Birds	Notes	Surveyor	
10/12/2018	HH Roost Survey	HHVP6	Woodcock			PM	
19/03/2019	HH Roost Survey	HHVP2	Woodcock	1	19:06 PM Roding Woodcock	JH	
21/03/2019	HH Roost Survey	HHVP3	Woodcock	1	19:03 PM Roding Woodcock	JH	
21/03/2019	HH Roost Survey	HHVP3	Woodcock	2	19:10 PM 2 WK in Chase Mode - in flight together	JH	
21/03/2019	HH Roost Survey	HHVP3	Woodcock	1	19:13 PM Roding Woodcock	JH	
21/03/2019	HH Roost Survey	HHVP3	Woodcock	1	19:14 PM Roding Woodcock	JH	
25/03/2019	HH Roost Survey	HHVP4	Woodcock	2	19:12 PM Roding Woodcock -2 Birds in flight together - Interacting - Chasing	JH	
25/03/2019	HH Roost Survey	HHVP4	Woodcock	1	19:16 PM Roding Woodcock		
25/03/2019	HH Roost Survey	HHVP4	Woodcock	1	19:19 PM Roding Woodcock	JH	
25/03/2019	HH Roost Survey	HHVP4	Woodcock	2	19:14 PM Roding Woodcock - 2 Birds Interacting - Chasing	JH	
23/05/2019	Commuting/ Migratory VP	CMVP1	Woodcock	1	Roding WK - Three flights at 21:56PM, 22:07 PM and 22:15 PM - No visual only vocalisation	JH	







Map Legend

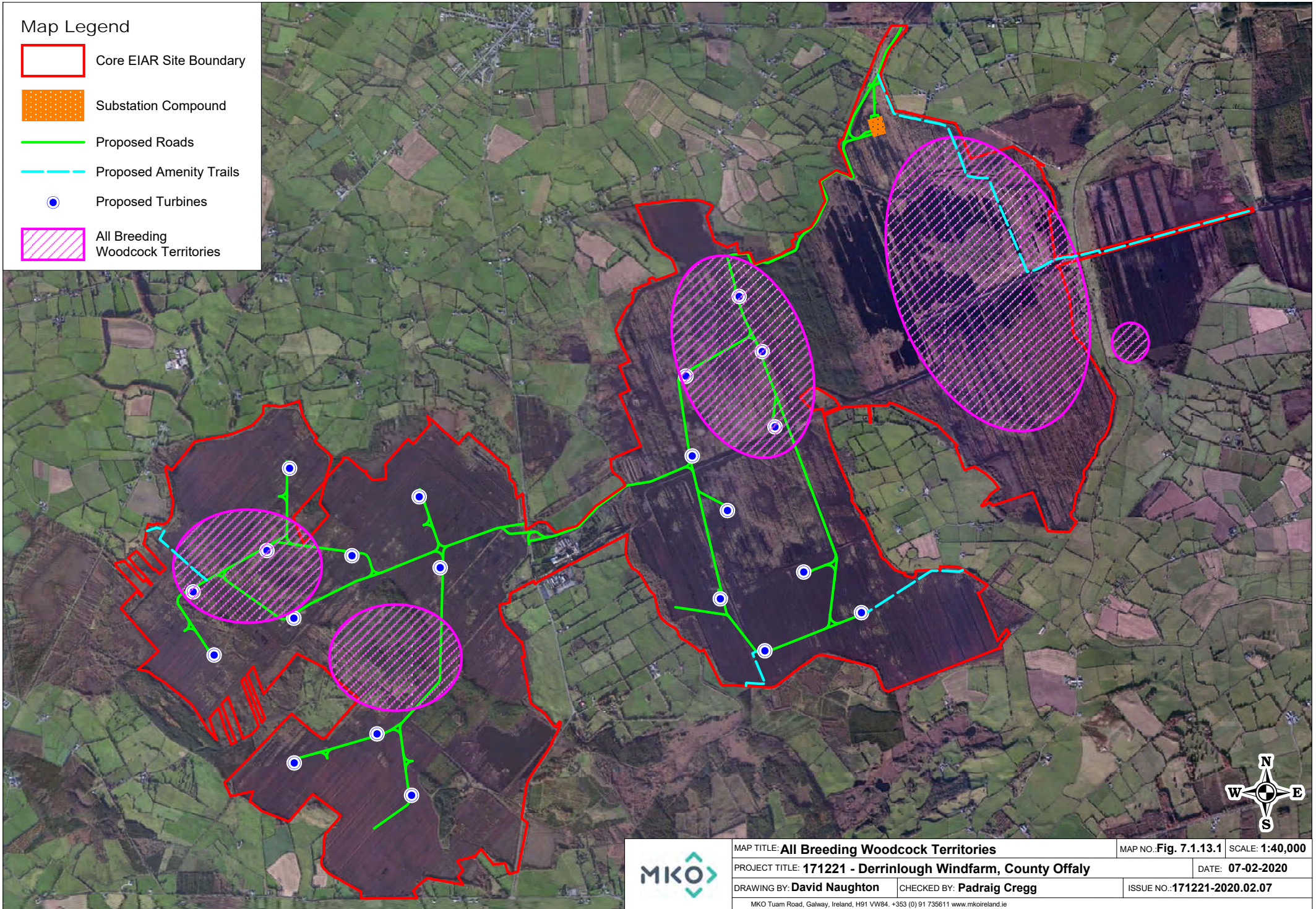
- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ Vantage Point Locations
- ★ Woodcock Flushed
- Woodcock VP Flights within 500m of Turbines
- Woodcock VP Flights >500m from Turbines



	MAP TITLE: Woodcock VP Flights (Oct 2017 - Sep 2019)		MAP NO.: Fig. 7.1.13	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Windfarm County Offaly			DATE: 16.01.2020	
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.16
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Map Legend

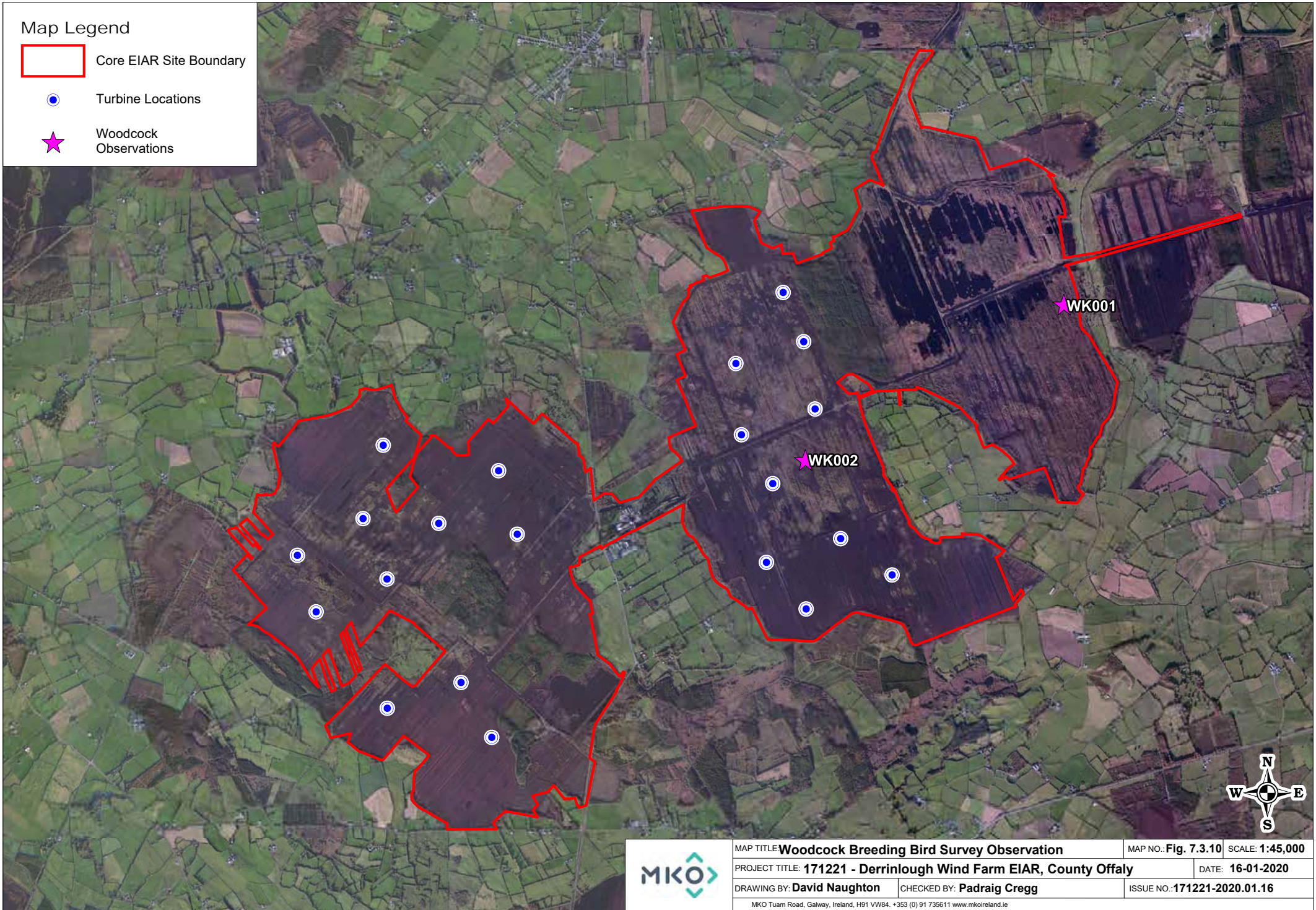
-  Core EIAR Site Boundary
-  Substation Compound
-  Proposed Roads
-  Proposed Amenity Trails
-  Proposed Turbines
-  All Breeding Woodcock Territories



	MAP TITLE: All Breeding Woodcock Territories	MAP NO.: Fig. 7.1.13.1	SCALE: 1:40,000
	PROJECT TITLE: 171221 - Derrinlough Windfarm, County Offaly	DATE: 07-02-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.02.07
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Map Legend

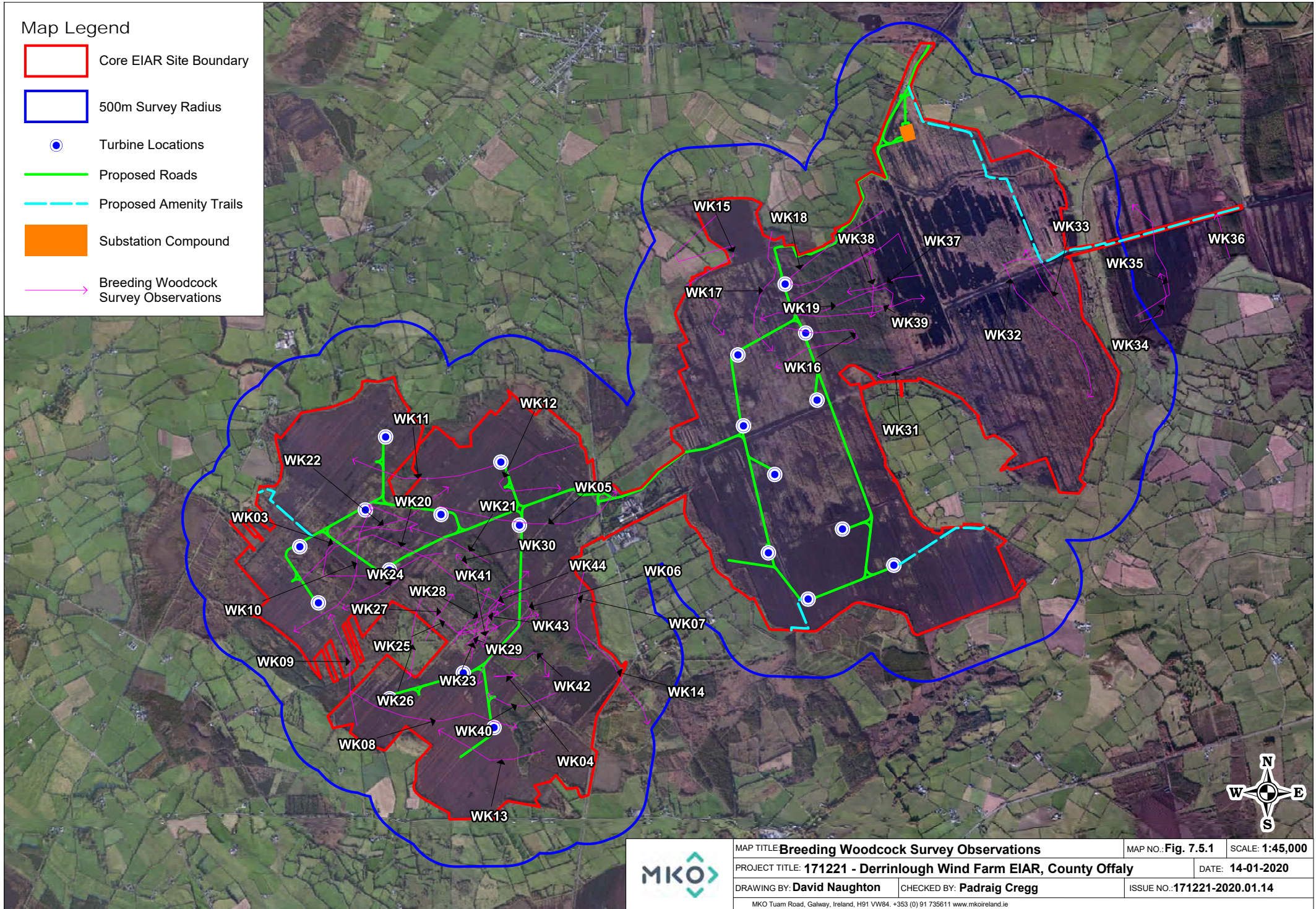
-  Core EIAR Site Boundary
-  Turbine Locations
-  Woodcock Observations



	MAP TITLE: Woodcock Breeding Bird Survey Observation	MAP NO.: Fig. 7.3.10	SCALE: 1:45,000
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly	DATE: 16-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16
	<small>MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie</small>		







Map Legend

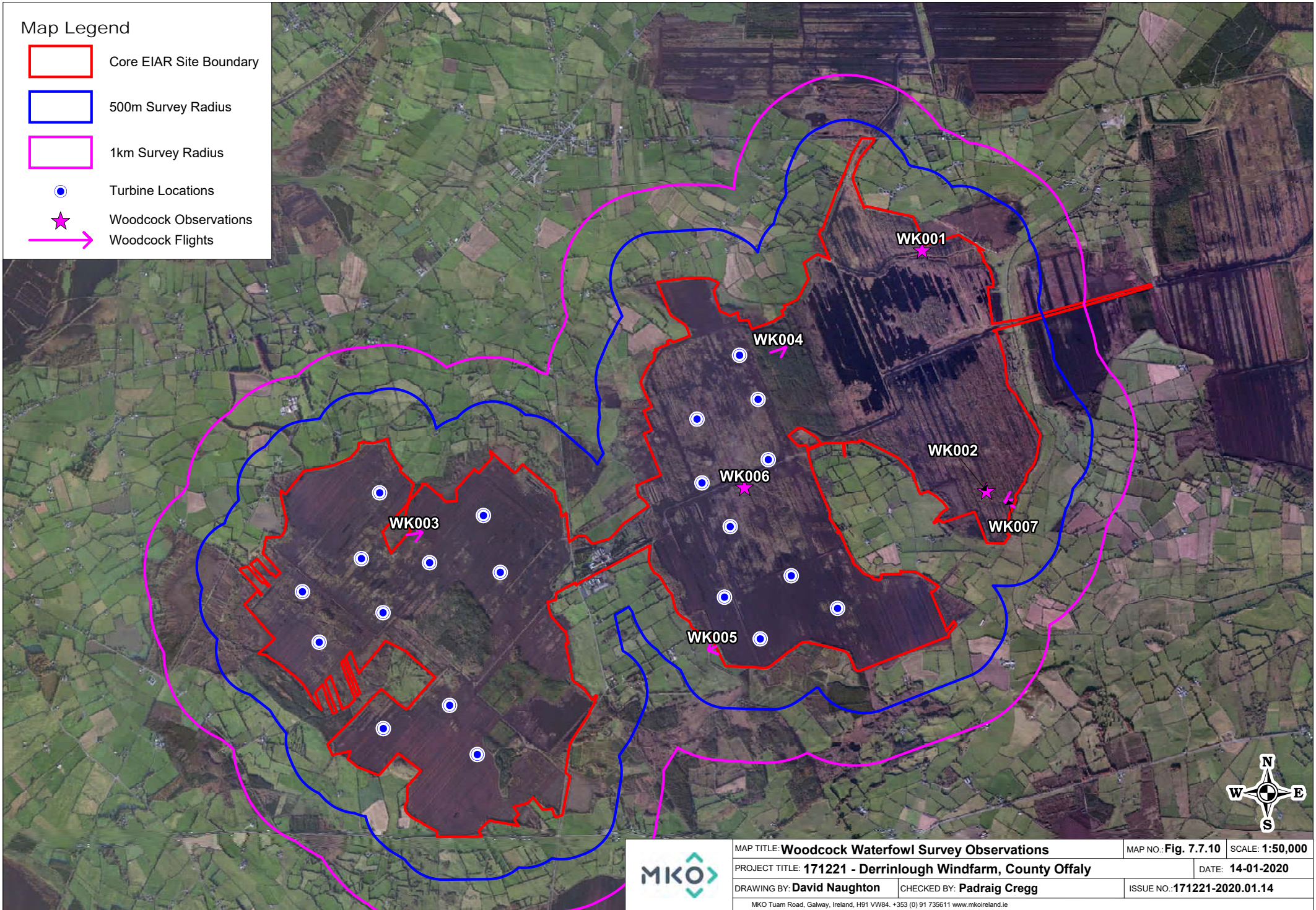
- Core EIAR Site Boundary
- 500m Survey Radius
- Turbine Locations
- Proposed Roads
- Proposed Amenity Trails
- Substation Compound
- Breeding Woodcock Survey Observations



	MAP TITLE: Breeding Woodcock Survey Observations	MAP NO.: Fig. 7.5.1	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly		DATE: 14-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.14	
	MKO Tuam Road, Galway, Ireland, H91 VV84. +353 (0) 91 735611 www.mkoireland.ie			

Map Legend

-  Core EIAR Site Boundary
-  500m Survey Radius
-  1km Survey Radius
-  Turbine Locations
-  Woodcock Observations
-  Woodcock Flights



	MAP TITLE: Woodcock Waterfowl Survey Observations		MAP NO.: Fig. 7.7.10	SCALE: 1:50,000	
	PROJECT TITLE: 171221 - Derrinlough Windfarm, County Offaly			DATE: 14-01-2020	
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.14
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Table 14 Curlew Survey Data

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
CU0001	16/07/2019	8	Curlew	1	09:53:13	143			143		PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Flying in a SW direction	JH
CU0002	01/08/2019	1	Curlew	1	12:20:57	40					PB4, (Cutover bog) alarm call	TR
CU0003	07/08/2019	8	Curlew	12	17:48:32	248		53	195		FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) GA1, (Improved agricultural grassland) Leaving Drinagh wetland, circling and landing in grassland	JH

Vantage Point Survey – Non-Flight Observations							
Map Ref. No.	Date	VP	Species	No. of Birds	Time	Comments	Surveyor
N/A	03/09/2018	1	Curlew	1	05:37:00	Calling from wet area of PB4 - no visual too dark	JH
N/A	16/07/2019	8	Curlew	1		Calling from Drinagh wetland	JH
N/A	11/09/2019	7	Curlew	1		Calling before start of survey. No visual, too dark.	JH
N/A	13/09/2019	8	Curlew	1		Calling from Drinagh Wetland	JH

Breeding Bird Survey							
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity	Comments	Surveyor
CU001	07/06/2018	10:25:00	Curlew	1	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes)	Disturbed by observer from flooded area of PB4. Flying and calling for period of 6 minutes while in the area.	JH



Breeding Bird Survey							
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity	Comments	Surveyor
N/A	12/06/2018	08:30:00	Curlew	1	Calling in area of Stonestown. No visual		JH
CU002	11/06/2019	05:59:57	Curlew	1	PB4, (Cutover bog) calling in flight		JH
CU003	20/06/2019	08:16:43	Curlew	2	FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Roosting on island at Drinagh wetland		JH

Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
CU001	05/11/2018	13:44:00	Curlew	1		GA1, (Improved agricultural grassland) PB4, (Cutover bog) Calling from area of grassland. Heard but not seen	JH

Migratory Bird Survey												
Map 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 (25-180m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
CU01	11/10/2018	CMVP4	Curlew	20	08:28:00	68	10	58			GA1, (Improved agricultural grassland) FW2, (Depositing/upland rivers) Landing in field close to Shannon	JH
CU02	19/10/2018	CMVP2	Curlew	26	08:50:00	22	22				GA1, (Improved agricultural grassland) FW2, (Depositing/upland rivers) Flying and landing in GA1- Foraging	JH
CU03	25/10/2018	CMVP4	Curlew	40	08:37:00	38	38				GA1, (Improved agricultural grassland) FW2, (Depositing/upland rivers) Landing at edge of FW2	JH
CU04	08/11/2018	CMVP2	Curlew	17	16:20:00	44	44				FW2, (Depositing/upland rivers) GA1, (Improved agricultural grassland) Landing at edge of River	JH

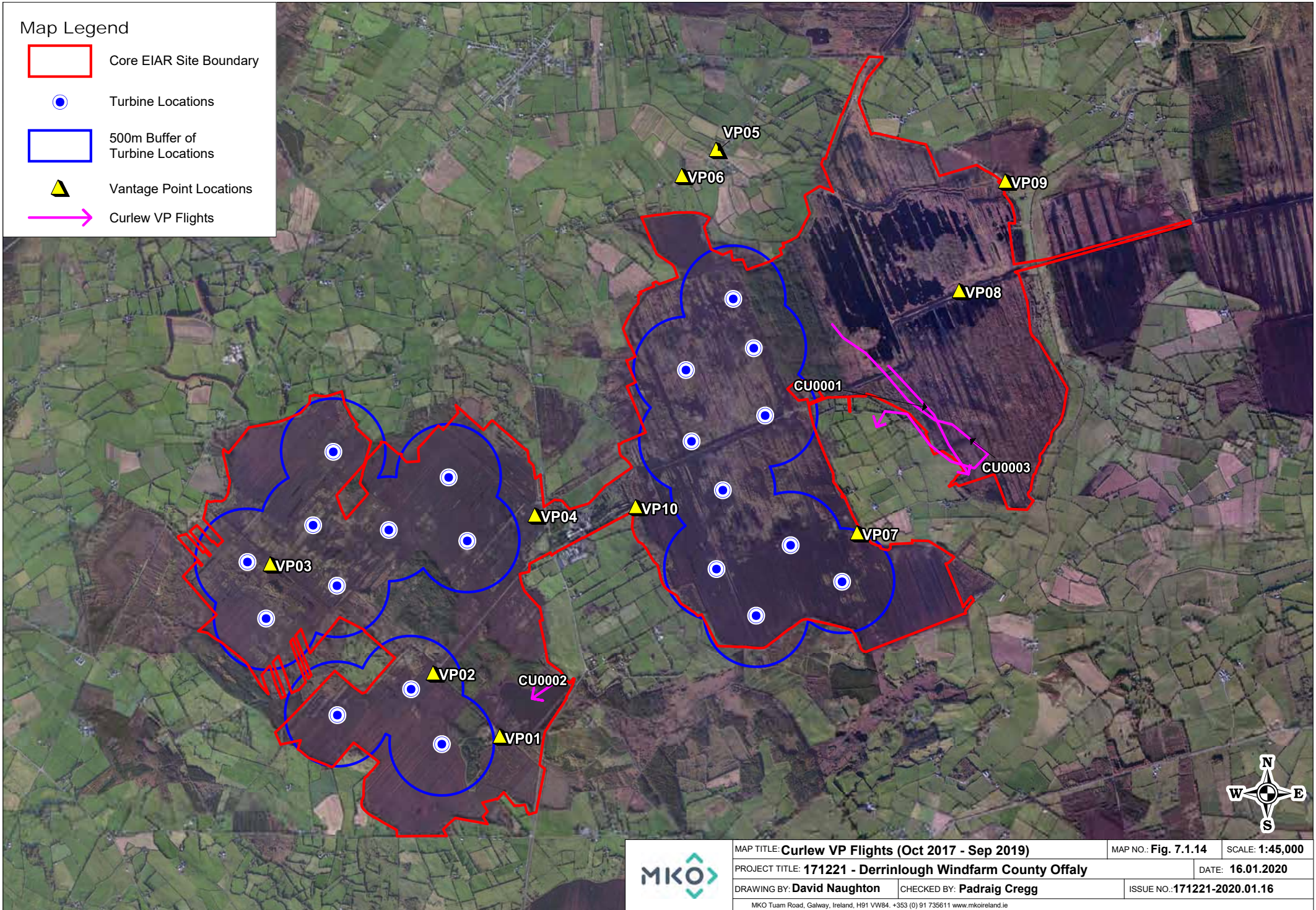


Migratory Bird Survey												
Map Ref. No.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-180m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
CU05	26/11/2018	CMVP4	Curlew	20	16:35:00	30	30				FW2, (Depositing/upland rivers) GA1, (Improved agricultural grassland) Landing at edge of River	JH
CU06	22/01/2019	CMVP2	Curlew	15	09:27:00	46	46				FW2, (Depositing/upland rivers) GA1, (Improved agricultural grassland) Landing in GA1 beside River	JH
CU07	02/08/2019	CMVP2	Curlew	7	20:40:18	15					Calling. Going down, possibly landed	TR




Incidental Observation						
Date	Survey Type	Location	Species	No. of Birds	Notes	Surveyor
26/06/2018	Non-Survey	Stonestown wetland	Curlew	9	Roosting flock	PT

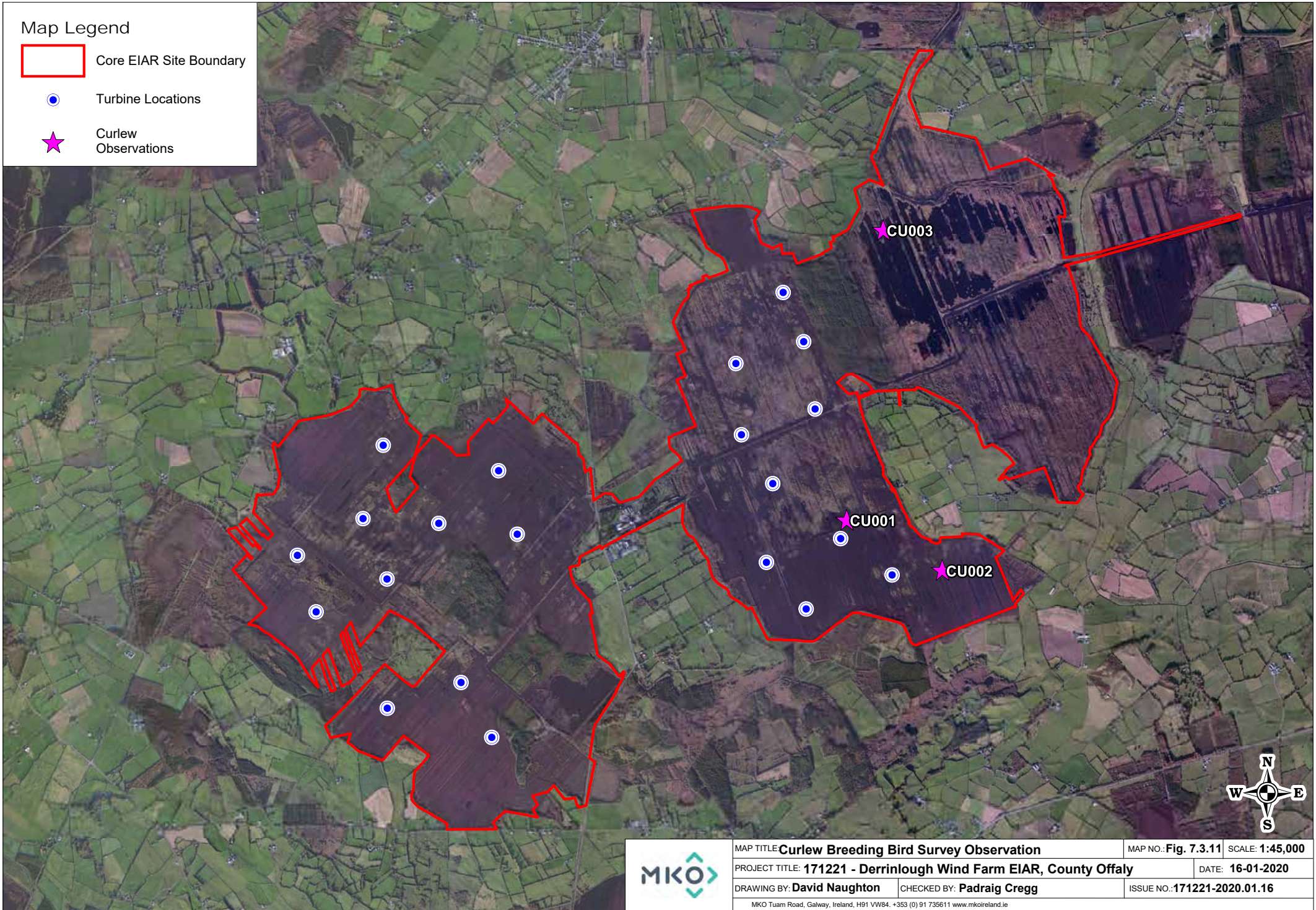
Map Legend

- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ Vantage Point Locations
- ➔ Curlew VP Flights








Map Legend

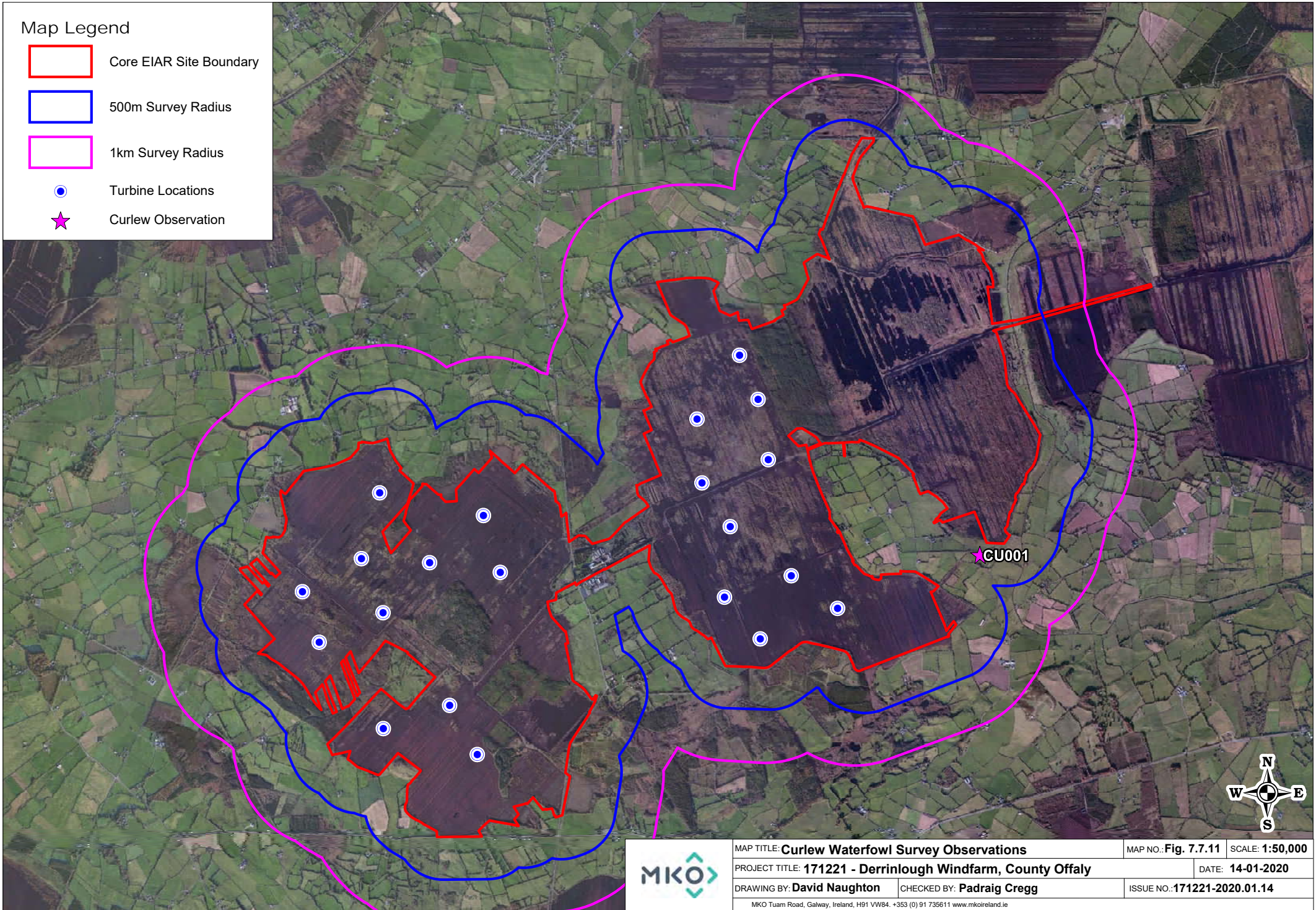
-  Core EIAR Site Boundary
-  Turbine Locations
-  Curlew Observations



	MAP TITLE: Curlew Breeding Bird Survey Observation	MAP NO.: Fig. 7.3.11	SCALE: 1:45,000
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly	DATE: 16-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16
	<small>MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkofireland.ie</small>		

Map Legend

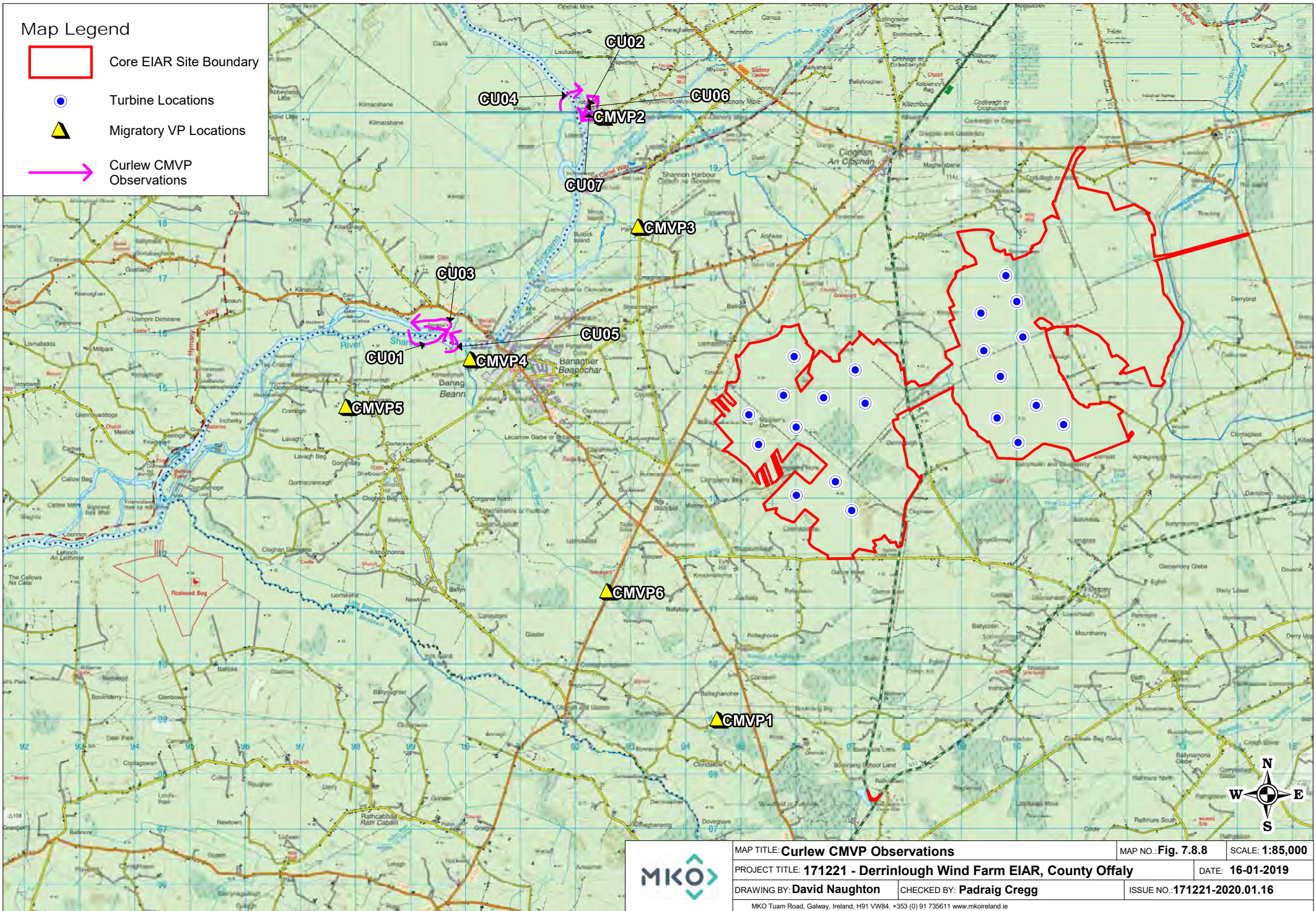
-  Core EIAR Site Boundary
-  500m Survey Radius
-  1km Survey Radius
-  Turbine Locations
-  Curlew Observation



	MAP TITLE: Curlew Waterfowl Survey Observations	MAP NO.: Fig. 7.7.11	SCALE: 1:50,000
	PROJECT TITLE: 171221 - Derrinlough Windfarm, County Offaly	DATE: 14-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.14
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Map Legend

- Core EIAR Site Boundary
- Turbine Locations
- ▲ Migratory VP Locations
- Curlew CMVP Observations



	MAP TITLE: Curlew CMVP Observations		MAP NO.: Fig. 7.8.8	SCALE: 1:85,000	
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly			DATE: 16-01-2019	
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.16
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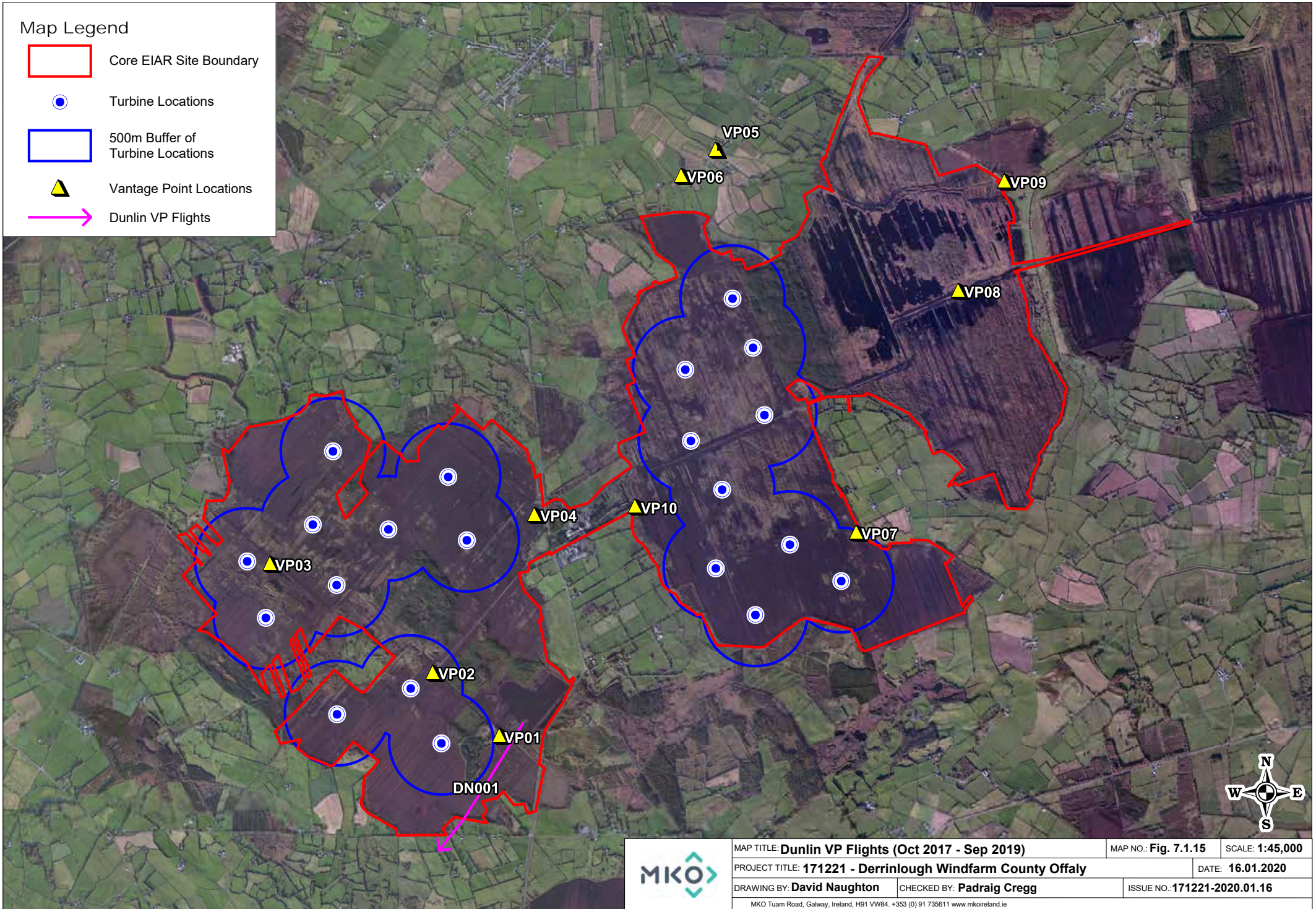
Table 15 Dunlin Survey Data

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
DN0001	25/05/2018	1	Dunlin	1	09:00:00	80	15	15	50		PB4, (Cutover bog) initially circling low over south corner of flood, then headed off gaining height (75m +)	P. Troake

Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
DN001	23/05/2019	12:16:43	Dunlin	4	Foraging	FL2, (Acid oligotrophic lakes) PB4, (Cutover bog)	JH






Map Legend

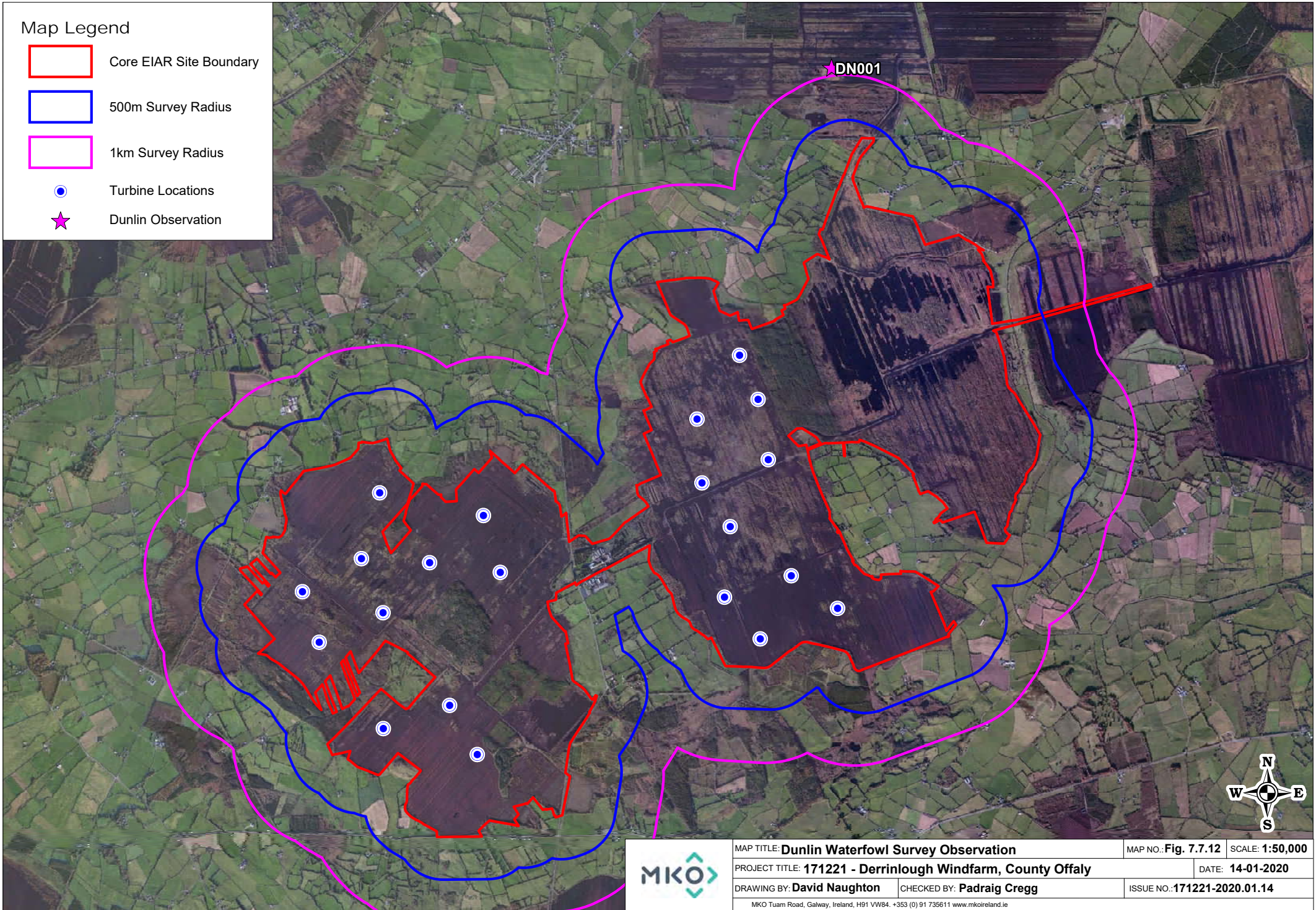
- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ Vantage Point Locations
- ➔ Dunlin VP Flights



	MAP TITLE: Dunlin VP Flights (Oct 2017 - Sep 2019)	MAP NO.: Fig. 7.1.15	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Windfarm County Offaly		DATE: 16.01.2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16	
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Map Legend

-  Core EIAR Site Boundary
-  500m Survey Radius
-  1km Survey Radius
-  Turbine Locations
-  Dunlin Observation



MAP TITLE: Dunlin Waterfowl Survey Observation	MAP NO.: Fig. 7.7.12	SCALE: 1:50,000
PROJECT TITLE: 171221 - Derrinlough Windfarm, County Offaly	DATE: 14-01-2020	
DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.14
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Table 16 Redshank Survey Data

Breeding Bird Survey							
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity	Comments	Surveyor
RK001	03/04/2018		Redshank	2	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Flying and Calling		JH
RK002	03/04/2018		Redshank	2	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Flying and Calling		JH
RK003	01/05/2018		Redshank	2	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Flying and Calling	Flying and calling along the railway line of Drinagh wetland	JH
RK004	01/05/2018		Redshank	3	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Flying and Calling	Distress calling - possibly 2 breeding pairs in this area	JH
RK005	22/05/2018		Redshank	2	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Flying and Calling		JH
RK006	22/05/2018		Redshank	2	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Flying and Calling	On Drinagh Wetland	JH
RK007	06/06/2018	05:42:00	Redshank	1	Flying and Calling. Distress calling	Breeding Territory	JH
RK008	06/06/2018	05:47:00	Redshank	1	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Foraging on flooded area		JH
RK009	06/06/2018	05:50:00	Redshank	2	Flying and Calling. Distress calling	Breeding Territory	JH
RK010	10/04/2019	09:56:30	Redshank	2	PB4, (Cutover bog) Flying and Calling		JH
RK011	03/05/2019	10:01:31	Redshank	2	FL2, (Acid oligotrophic lakes)		JH
RK012	03/05/2019	10:22:23	Redshank	1	FL2, (Acid oligotrophic lakes)		JH
RK013	18/06/2019	04:26:22	Redshank	1	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Flying and calling.		JH

Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
RK001	04/03/2019		Redshank	2			JH

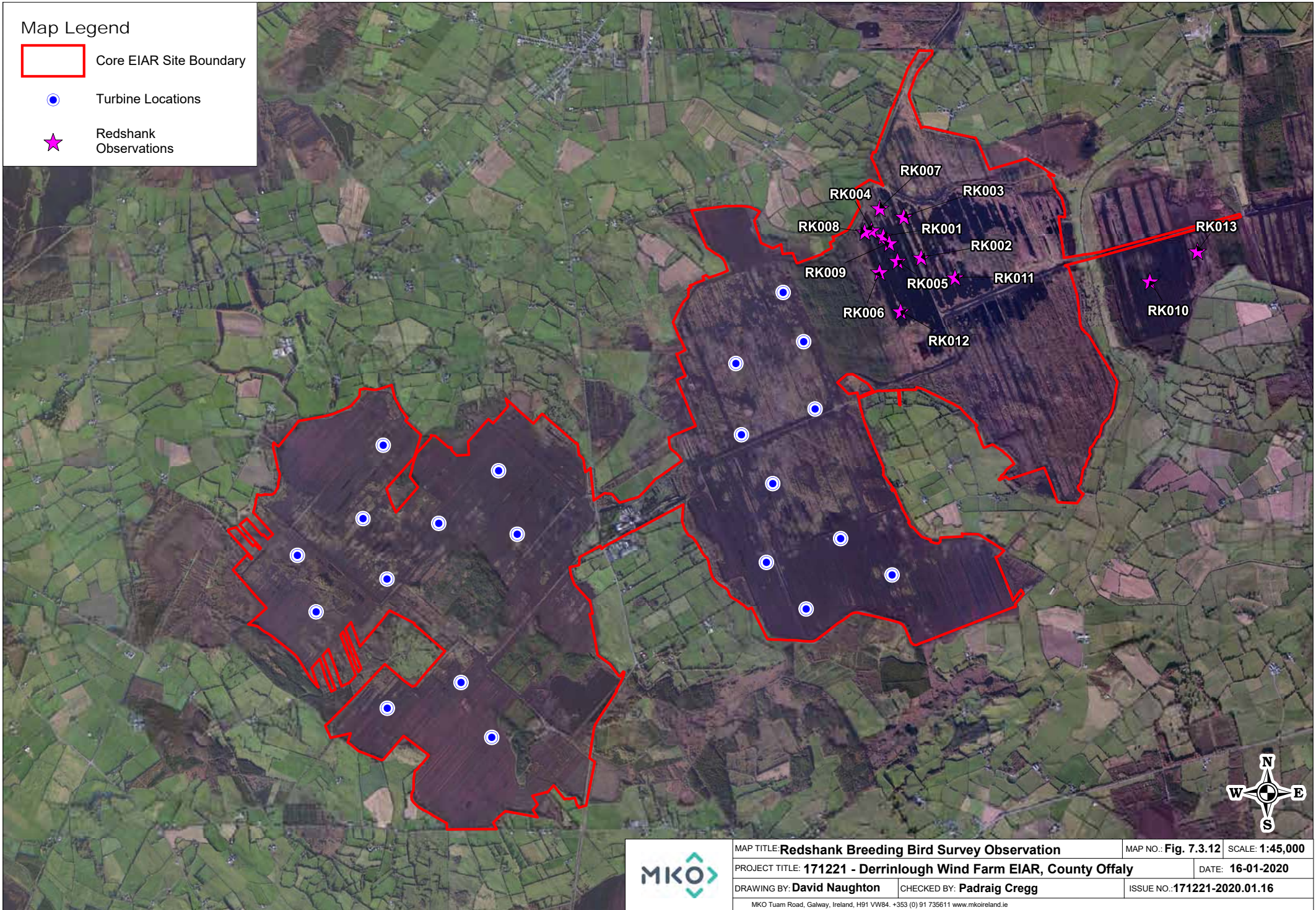


Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
RK002	28/03/2019		Redshank	1			JH
RK003	28/03/2019		Redshank	1			JH
RK004	28/03/2019		Redshank	1		Noggus Bog	JH
RK005	28/03/2019		Redshank	2		Noggus Bog	JH
RK006	29/04/2019	11:51:02	Redshank	2	Flying and Calling	FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) On wet area	JH
RK007	29/04/2019	13:10:59	Redshank	2	Flying and Calling	PB4, (Cutover bog) Disturbed by observer	JH
RK008	03/05/2019	13:23:40	Redshank	2	Flying and Calling	FL2, (Acid oligotrophic lakes)	JH
RK009	03/05/2019	14:04:46	Redshank	2	Flying and Calling	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes)	JH
RK010	10/05/2019	14:13:54	Redshank	1	Foraging	FL2, (Acid oligotrophic lakes)	JH
RK011	10/05/2019	14:36:02	Redshank	1	Foraging		JH
RK012	27/05/2019	11:53:58	Redshank	2	Alarm calling	PB4, (Cutover bog) Defending territory.	JH

Incidental Observations						
Date	Survey Type	Location	Species	No. of Birds	Notes	Surveyor
26/06/2018	Non-Survey	Stonestown wetland	Redshank	4	probably 2 pairs (1 bird agitated - with chicks?)	PT
03/09/2018	VP Survey	VP1	Redshank	1	07:30 AM Foraging at edge of wet area of PB4	JH
16/04/2019	VP Survey	VP3	Redshank	1	Calling on numerous occasions during survey. No Visual	JH
21/03/2019	HH Roost Survey	HHVP3 Derrybrat	Redshank	1	17:43 PM Flying and landing on wet area of PB4	JH







Map Legend

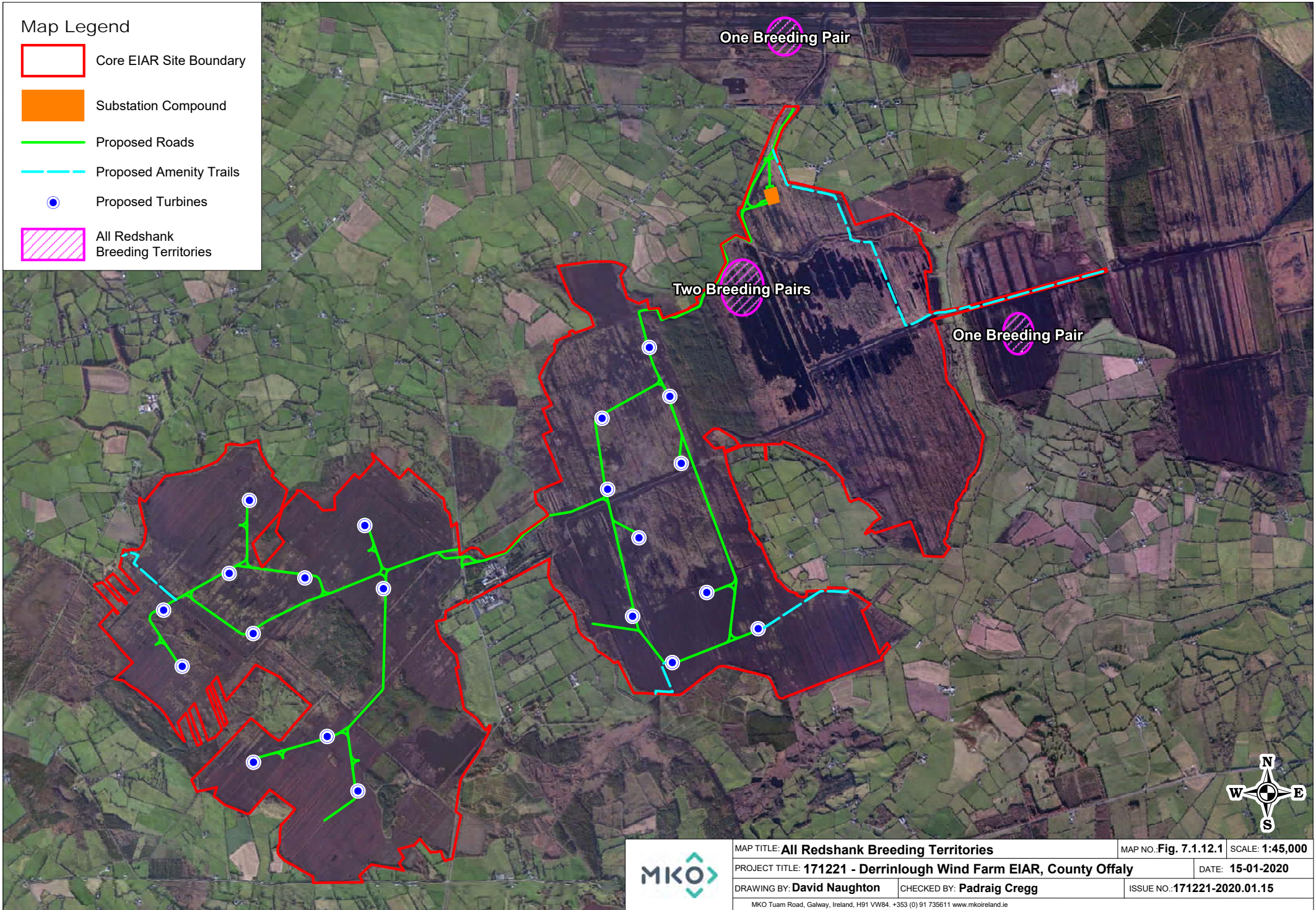
- Core EIAR Site Boundary
- Turbine Locations
- ★ Redshank Observations



	MAP TITLE: Redshank Breeding Bird Survey Observation	MAP NO.: Fig. 7.3.12	SCALE: 1:45,000
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly	DATE: 16-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16
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Map Legend

-  Core EIAR Site Boundary
-  Substation Compound
-  Proposed Roads
-  Proposed Amenity Trails
-  Proposed Turbines
-  All Redshank Breeding Territories



	MAP TITLE: All Redshank Breeding Territories		MAP NO.: Fig. 7.1.12.1	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly			DATE: 15-01-2020	
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.15
	<small>MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie</small>				

Table 17 Shoveler Survey Data

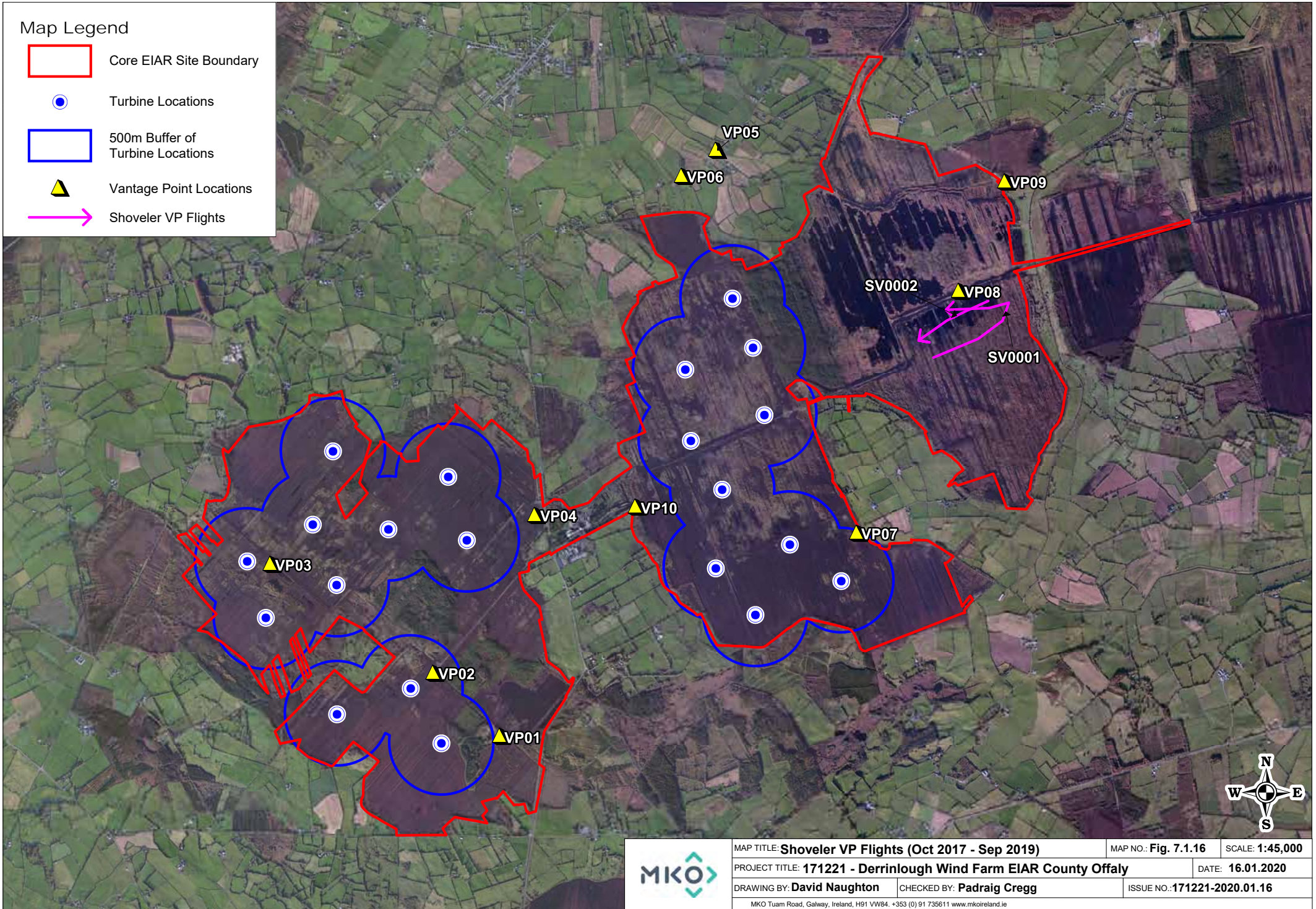
Vantage Point Survey													
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity		Surveyor
SV0001	25/04/2019	8	Shoveler	1	16:13:48	35	0	35	0	0	PB4, (Cutover bog) male landing on water		TR
SV0002	25/04/2019	8	Shoveler	3	17:26:50	25	0	25	0	0	PB4, (Cutover bog) 2 males 1 female		TR

Breeding Bird Survey								
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity		Comments	Surveyor
SV001	10/04/2019	07:21:21	Shoveler	4	PB4, (Cutover bog) Flying			JH

Winter Transect/Waterfowl Survey								
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity		Surveyor
SV001	02/01/2019		Shoveler	16		Noggus Bog		JH
SV002	09/01/2019		Shoveler	5				JH
SV003	29/04/2019	11:52:05	Shoveler	1	Roosting	FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) On wet area		JH
SV004	29/04/2019	13:17:10	Shoveler	1	Roosting	PB4, (Cutover bog) On wet area		JH
SV005	03/05/2019	14:12:32	Shoveler	2	Roosting	FL2, (Acid oligotrophic lakes)		JH




Map Legend

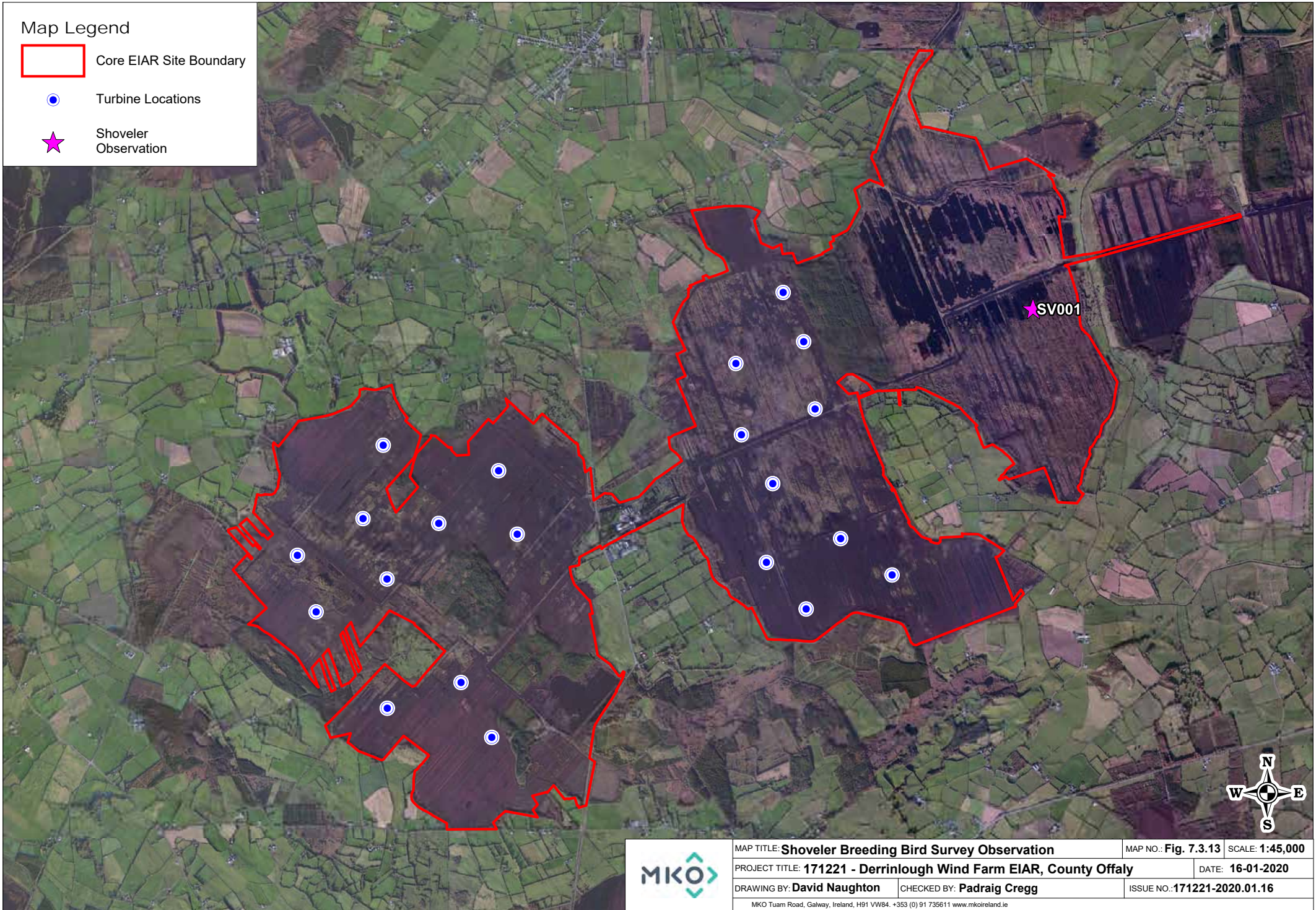
- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ Vantage Point Locations
- ➔ Shoveler VP Flights



	MAP TITLE: Shoveler VP Flights (Oct 2017 - Sep 2019)	MAP NO.: Fig. 7.1.16	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR County Offaly		DATE: 16.01.2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16	
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Map Legend

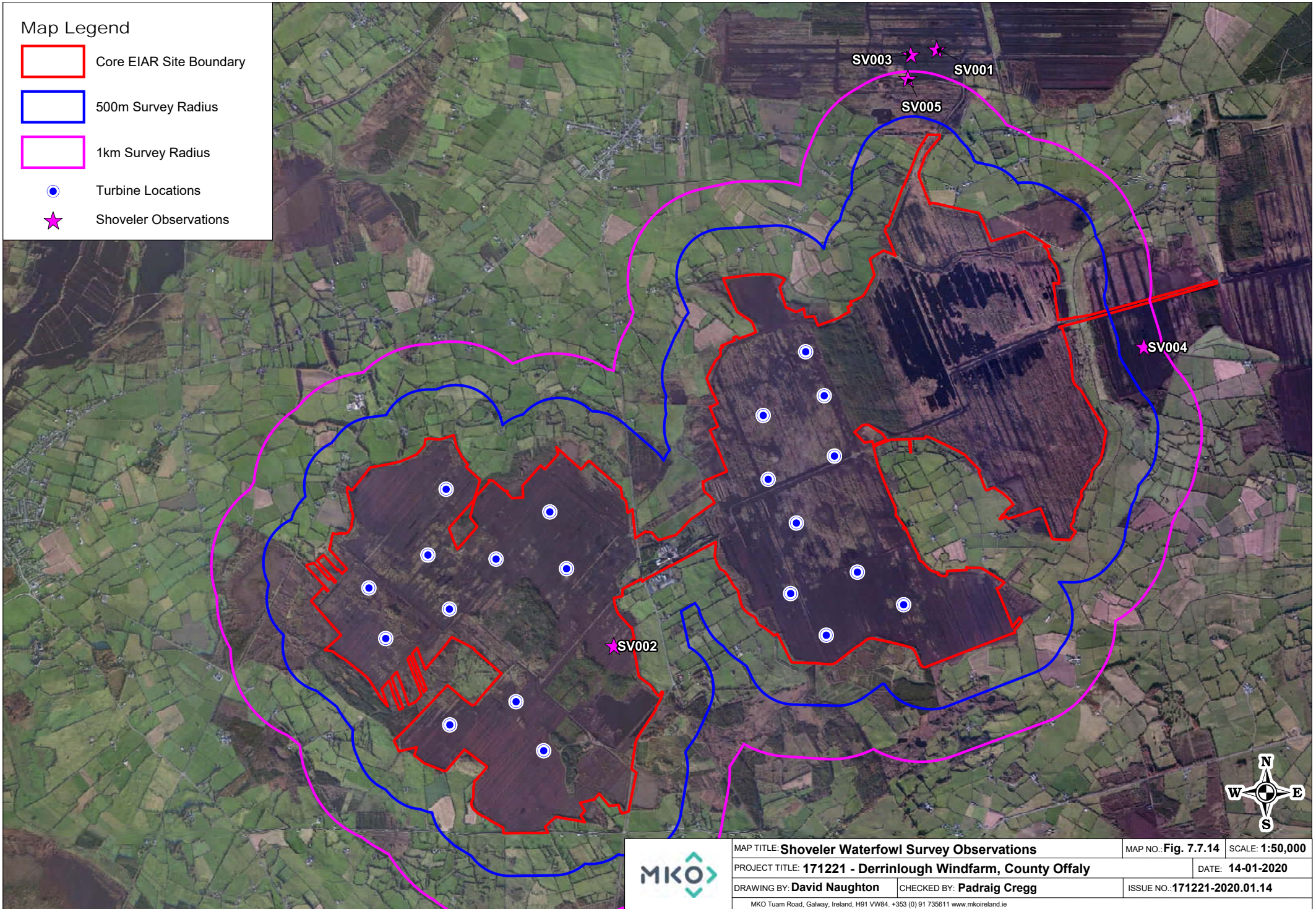
-  Core EIAR Site Boundary
-  Turbine Locations
-  Shoveler Observation



	MAP TITLE: Shoveler Breeding Bird Survey Observation	MAP NO.: Fig. 7.3.13	SCALE: 1:45,000
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly	DATE: 16-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16
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Map Legend

-  Core EIAR Site Boundary
-  500m Survey Radius
-  1km Survey Radius
-  Turbine Locations
-  Shoveler Observations



	MAP TITLE: Shoveler Waterfowl Survey Observations	MAP NO.: Fig. 7.7.14	SCALE: 1:50,000
	PROJECT TITLE: 171221 - Derrinlough Windfarm, County Offaly	DATE: 14-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.14
	<small>MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie</small>		

Table 18 Tufted Duck Survey Data

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
TU0001	18/04/2018	8	Tufted Duck	2	11:18:00	22	5	17			PB4, (Cutover bog) landing on wet area of PB4	JH
TU0002	30/04/2019	5	Tufted Duck	1	20:33:23	15		10			PB4, (Cutover bog) landing	TR

Vantage Point Non-Flight Observations							
Map Ref. No.	Date	VP	Species	No. of Birds	Time	Comments	Surveyor
N/A	10/10/2017	5	Tufted Duck	4	12:05:00	Feeding on pond west of the tracks, S end of pond	SON
N/A	10/01/2018	5	Tufted Duck	5	07:54:00	Feeding on south end of pond west of tracks	SON
N/A	09/02/2018	5	Tufted Duck	3	07:34:00	Feeding at South end of pond west of tracks	SON
N/A	24/03/2018	5	Tufted Duck	4	12:25:00	Feeding on pond to W of track	SON

Breeding Bird Survey							
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity	Comments	Surveyor
TU001	03/04/2018		Tufted Duck	2	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Roosting on flooded area		JH
TU002	03/04/2018		Tufted Duck	2	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Roosting on flooded area		JH
TU003	10/04/2018		Tufted Duck	2	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Roosting on flooded area		JH
TU004	10/04/2018		Tufted Duck	3	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Roosting on flooded area		JH



Breeding Bird Survey							
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity	Comments	Surveyor
TU005	01/05/2018		Tufted Duck	8	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Foraging / Roosting on flooded area		JH
TU006	02/05/2018		Tufted Duck	1	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Roosting on flooded area		JH
TU007	22/05/2018		Tufted Duck	7	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Roosting on flooded area	On Drinagh Wetland	JH
TU008	22/05/2018		Tufted Duck	2	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Roosting on flooded area	On Drinagh Wetland	JH
TU009	06/06/2018	05:57:00	Tufted Duck	2	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Roosting on flooded area		JH
TU010	06/06/2018	06:07:00	Tufted Duck	1	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Roosting on flooded area		JH
TU011	03/05/2019	09:47:52	Tufted Duck	3	FL2, (Acid oligotrophic lakes)		JH
TU012	03/05/2019	09:53:23	Tufted Duck	7	FL2, (Acid oligotrophic lakes) PB4, (Cutover bog)		JH
TU013	03/05/2019	09:54:35	Tufted Duck	2	FL2, (Acid oligotrophic lakes)		JH
TU014	07/06/2019	09:23:38	Tufted Duck	1	FL2, (Acid oligotrophic lakes) Roosting on island		JH
TU015	07/06/2019	09:28:01	Tufted Duck	7	FL2, (Acid oligotrophic lakes) Roosting		JH
TU016	07/06/2019	10:15:52	Tufted Duck	1	FL2, (Acid oligotrophic lakes) Roosting		JH
TU017	07/06/2019	10:29:10	Tufted Duck	1	FL2, (Acid oligotrophic lakes) Roosting		JH
TU018	07/06/2019	10:41:27	Tufted Duck	2	FL2, (Acid oligotrophic lakes) Roosting		JH
TU019	11/06/2019	10:09:14	Tufted Duck	2	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Roosting on flooded area		JH
TU020	01/07/2019	10:08:03	Tufted Duck	6	FL2, (Acid oligotrophic lakes)		JH

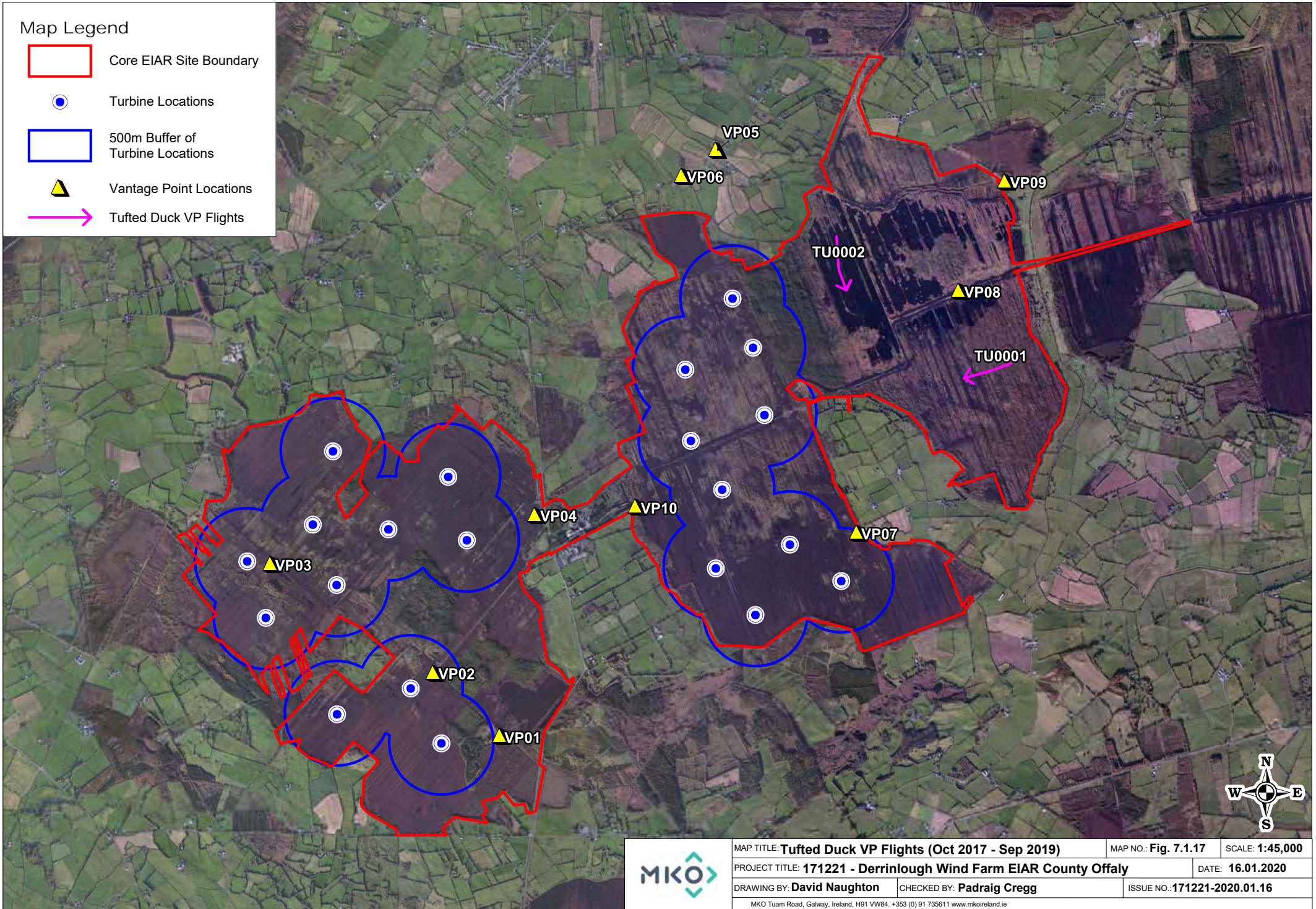


Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
TU001	02/01/2019		Tufted Duck	2			JH
TU002	25/02/2019		Tufted Duck	2			JH
TU003	04/03/2019		Tufted Duck	2			JH
TU004	28/03/2019		Tufted Duck	4			JH
TU005	28/03/2019		Tufted Duck	7			JH
TU006	29/04/2019	11:36:15	Tufted Duck	4		FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Landing on wet area	JH
TU007	03/05/2019	13:07:19	Tufted Duck	4	Roosting	FL2, (Acid oligotrophic lakes)	JH
TU008	10/05/2019	14:18:41	Tufted Duck	2	Roosting	FL2, (Acid oligotrophic lakes)	JH
TU009	10/05/2019	14:19:41	Tufted Duck	5	Roosting	FL2, (Acid oligotrophic lakes)	JH
TU010	10/05/2019	14:21:33	Tufted Duck	1	Roosting	FL2, (Acid oligotrophic lakes)	JH
TU011	23/05/2019	10:59:22	Tufted Duck	2	Roosting	FL2, (Acid oligotrophic lakes)	JH

Incidental Observation						
Date	Survey Type	Location	Species	No. of Birds	Notes	Surveyor
26/06/2018	Non-Survey	Stonestown wetland	Tufted Duck		2 broods	PT

Map Legend

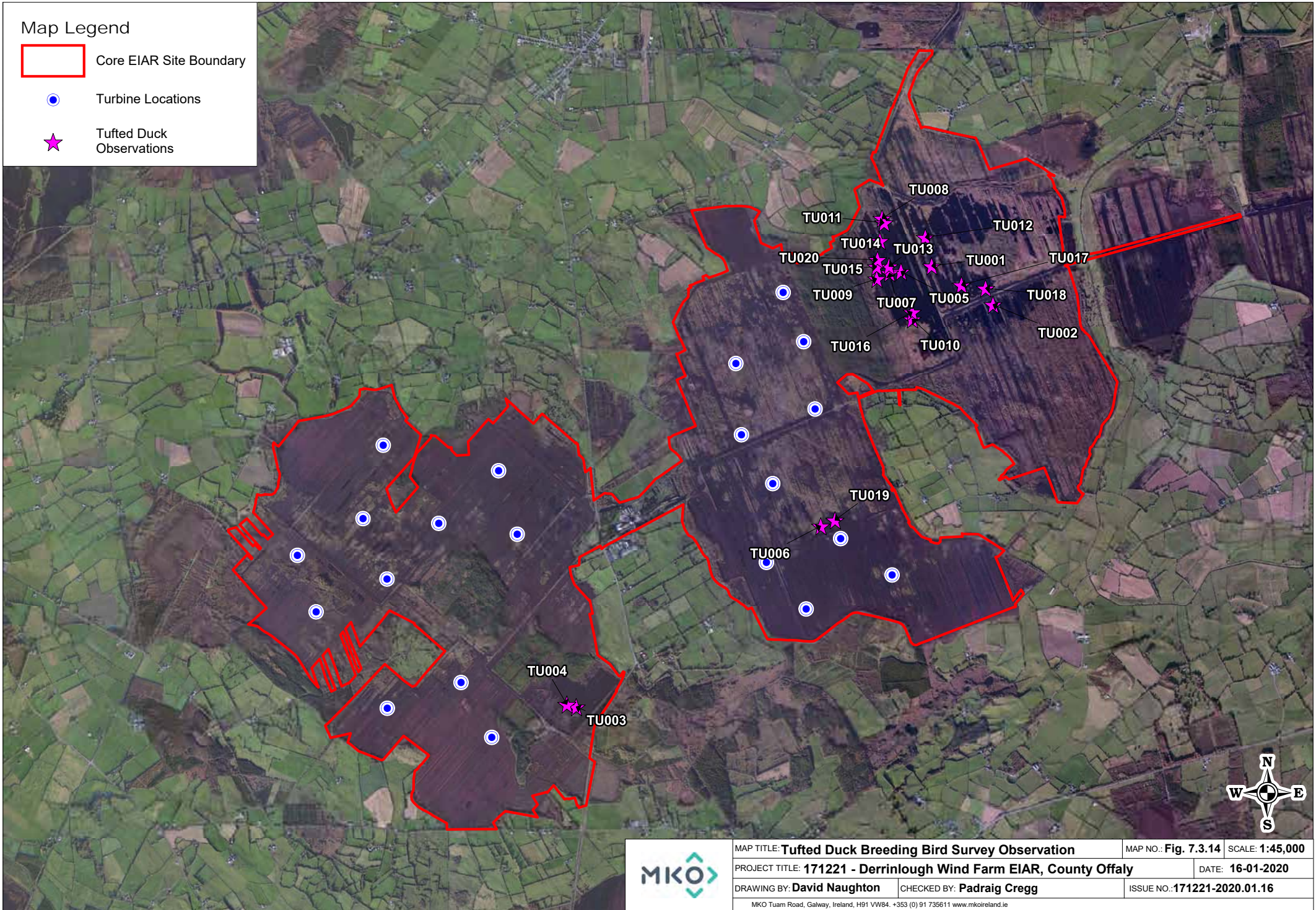
- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ Vantage Point Locations
- ➔ Tufted Duck VP Flights



	MAP TITLE: Tufted Duck VP Flights (Oct 2017 - Sep 2019)		MAP NO.: Fig. 7.1.17	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR County Offaly			DATE: 16.01.2020	
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.16
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie				

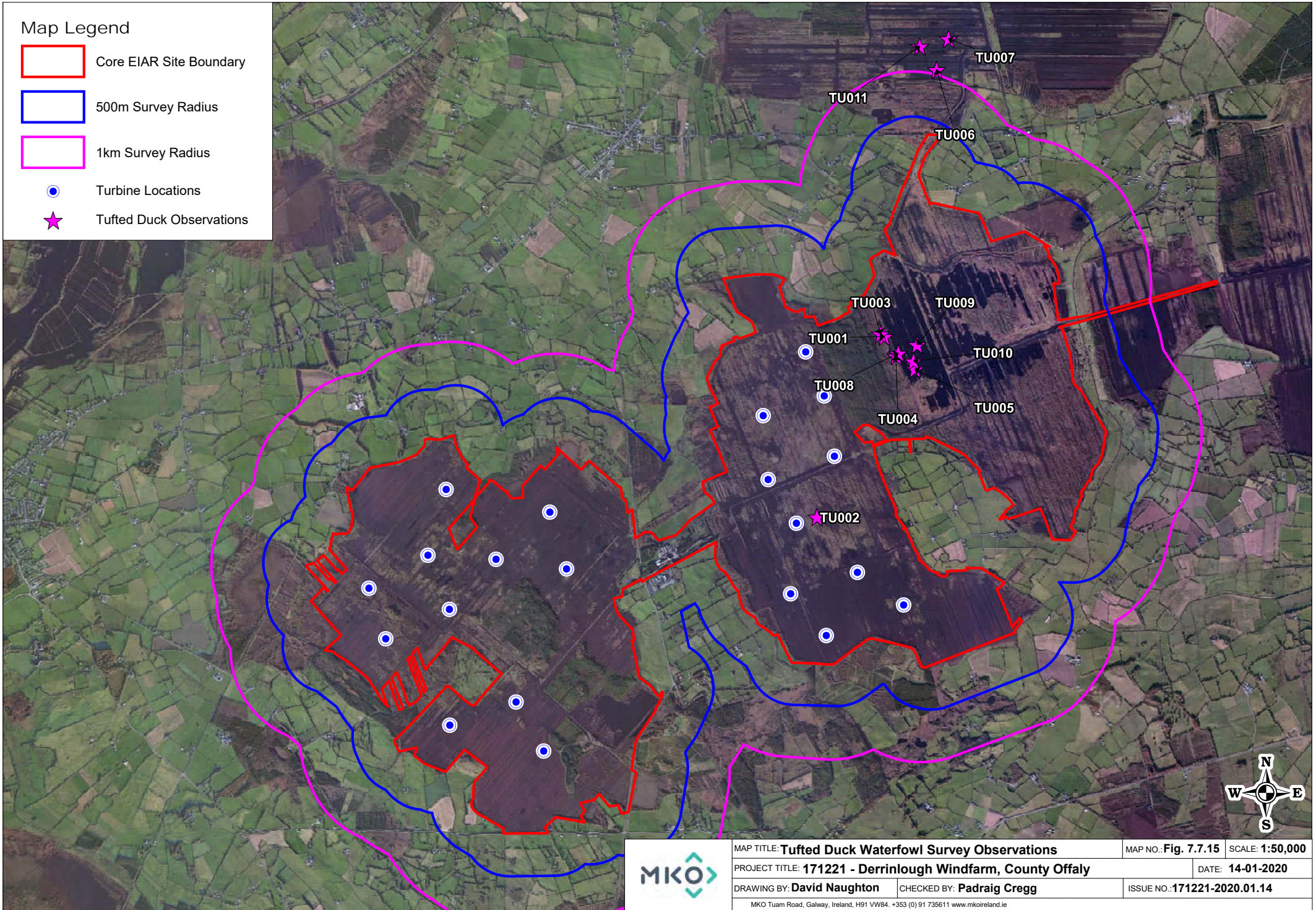
Map Legend

- Core EIAR Site Boundary
- Turbine Locations
- ★ Tufted Duck Observations



Map Legend

- Core EIAR Site Boundary
- 500m Survey Radius
- 1km Survey Radius
- Turbine Locations
- ★ Tufted Duck Observations



	MAP TITLE: Tufted Duck Waterfowl Survey Observations		MAP NO.: Fig. 7.7.15	SCALE: 1:50,000	
	PROJECT TITLE: 171221 - Derrinlough Windfarm, County Offaly			DATE: 14-01-2020	
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.14
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie				

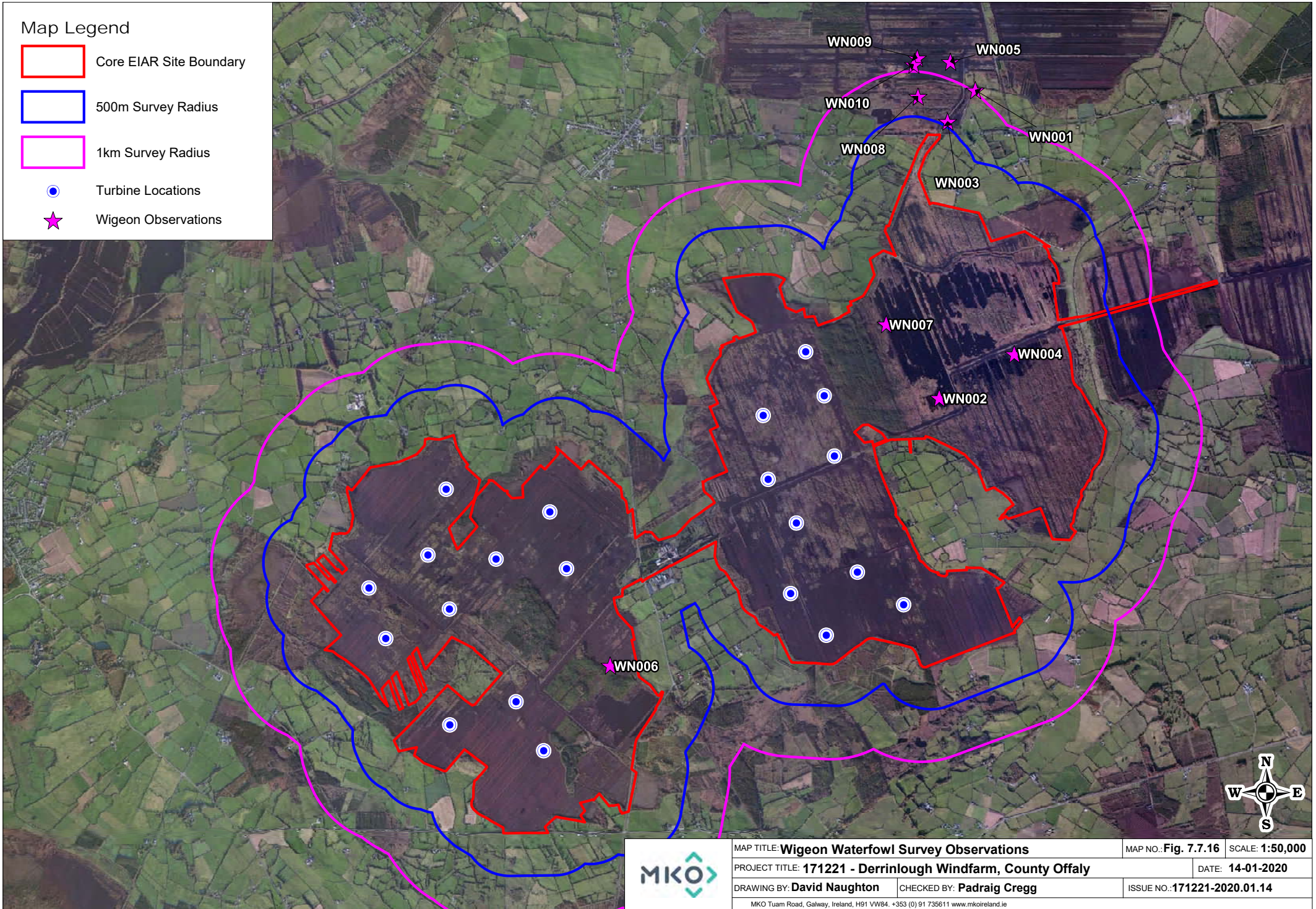
Table 19 Wigeon Survey Data

Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
WN001	30/10/2018		Wigeon	13		Noggus Bog	JH
WN002	30/10/2018		Wigeon	2			JH
WN003	12/11/2018	11:59:00	Wigeon	10	Roosting	Noggus bog. Roosting on flooded area.	JH
WN004	02/01/2019		Wigeon	7			JH
WN005	02/01/2019		Wigeon	30		Noggus Bog	JH
WN006	09/01/2019		Wigeon	19			JH
WN007	28/01/2019		Wigeon	35			JH
WN008	25/02/2019		Wigeon	20		Noggus Bog	JH
WN009	04/03/2019		Wigeon	14		Noggus Bog	JH
WN010	27/09/2019	10:45:51	Wigeon	1	Foraging	FL2, (Acid oligotrophic lakes) PB4, (Cutover bog)	JH

Migratory Bird Survey												
Map 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 (25-180m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
WN01	26/11/2018	CMVP4	Wigeon	16	14:43:00	50				50	GA1, (Improved agricultural grassland) FW2, (Depositing/upland rivers) Travelling	JH
WN02	29/01/2019	CMVP6	Wigeon	90	08:04:00	58			58		GA1, (Improved agricultural grassland) WD4, (Conifer plantation) Travelling	JH

Map Legend

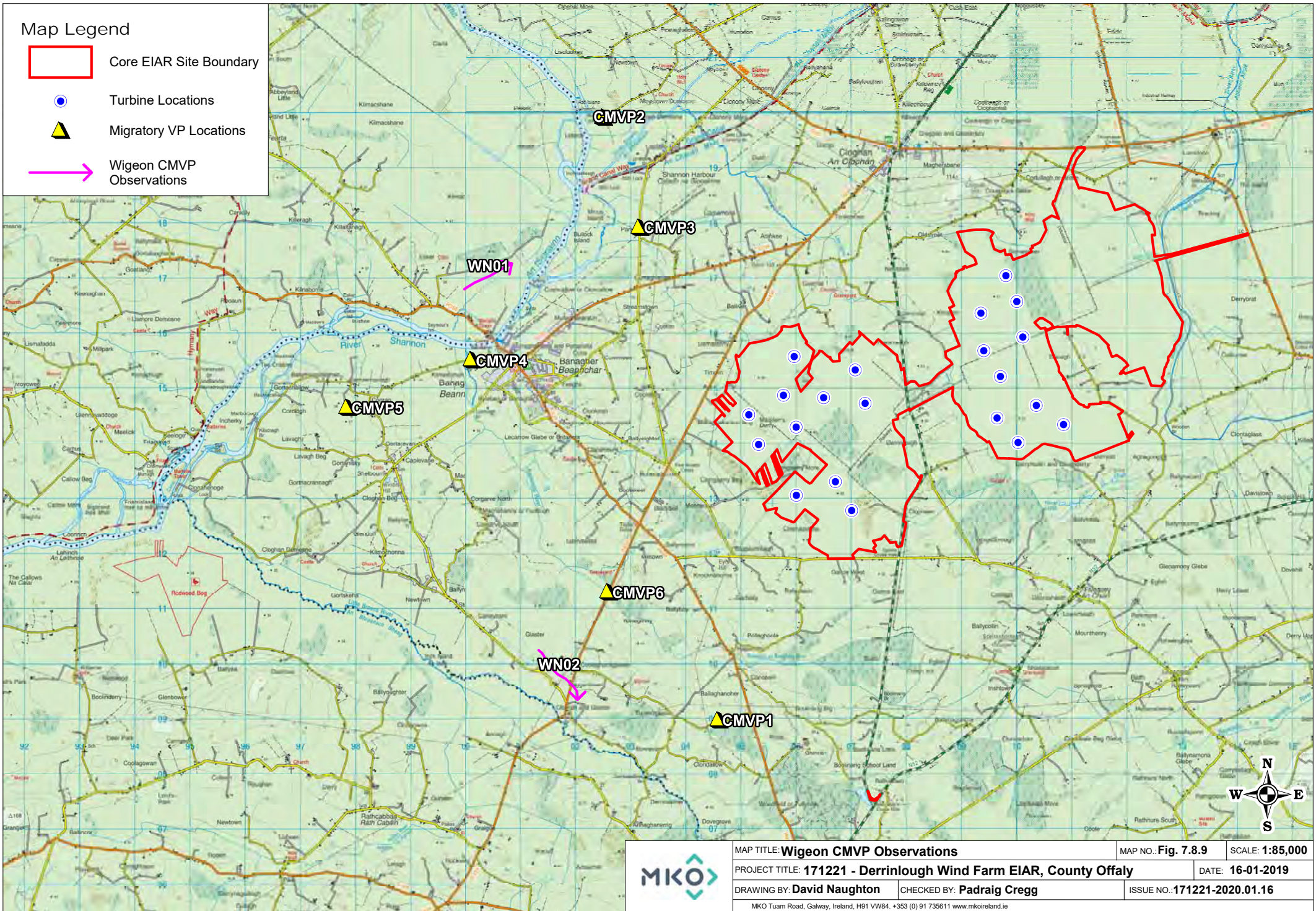
- Core EIAR Site Boundary
- 500m Survey Radius
- 1km Survey Radius
- Turbine Locations
- ★ Wigeon Observations



	MAP TITLE: Wigeon Waterfowl Survey Observations		MAP NO.: Fig. 7.7.16	SCALE: 1:50,000	
	PROJECT TITLE: 171221 - Derrinlough Windfarm, County Offaly			DATE: 14-01-2020	
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.14
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Map Legend

- Core EIAR Site Boundary
- Turbine Locations
- ▲ Migratory VP Locations
- Wigeon CMVP Observations



	MAP TITLE: Wigeon CMVP Observations	MAP NO.: Fig. 7.8.9	SCALE: 1:85,000	
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly		DATE: 16-01-2019	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16	
	<small>MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie</small>			



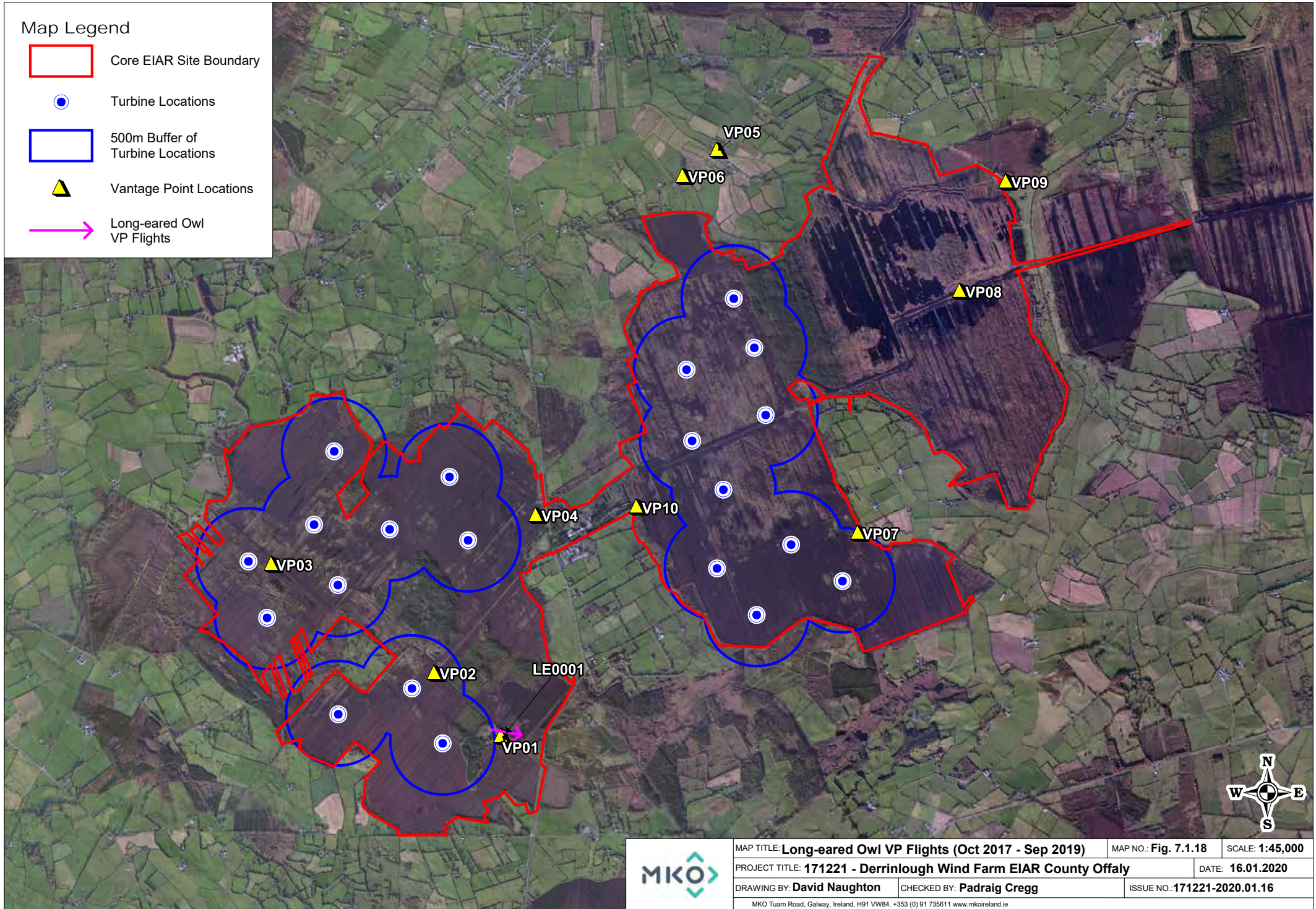
Table 20 Long-eared Owl Survey Data

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
LE0001	09/05/2019	1	Long-eared Owl	1	05:06:00	5					PB4, (Cutover bog) travelling low	TR

Incidental Observation						
Date	Survey Type	Location	Species	No. of Birds	Notes	Surveyor
19/03/2019	HH Roost Survey	HHVP2 Black Lough	Long-eared Owl	1	17:50 PM Long-Eared Owl heard calling while at van packing away gear.	JH

Map Legend

- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ Vantage Point Locations
- Long-eared Owl VP Flights



	MAP TITLE: Long-eared Owl VP Flights (Oct 2017 - Sep 2019)	MAP NO.: Fig. 7.1.18	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR County Offaly		DATE: 16.01.2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16	
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Table 21 Buzzard Survey Data

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0403	09/10/2017	6	Buzzard	1	15:18:00	120			120		Circling to the W of conifer plantation. Flew NE off site.	SON
BZ0404	09/10/2017	7	Buzzard	1	11:44:00	90			90		Circling to the NW of VP, drifted off E.	SONeill
BZ0405	12/10/2017		Buzzard	3	14:48:00	300			300		Over conifers and bog	BM
BZ0406	19/10/2017	8	Buzzard	1	11:56:00	90			90		Circling	BM
BZ0407	23/10/2017	7	Buzzard	1	15:55:00	30	15	15			Flying S along S/SW edge of site mobbed by 2 HC	SON
BZ0408	07/11/2017	9	Buzzard	1	15:48:00	90			90		Flew to NE off site	SON
BZ0409	15/11/2017	7	Buzzard	1	12:58:00	40	20	20			Flew in from E flying W turned N/NW. Landed in scrub to the N.	SON
BZ0410	09/12/2017	5	Buzzard	1	15:50:00	360	180	180			Rose off site circled and settled again	SÓNeill
BZ0411	09/12/2017	10	Buzzard	1	16:26:00	45			45		Flew in arc and then off site	BM
BZ0412	12/12/2017	1	Buzzard	1	13:34:00	45	23	22			Flew over conifers	BM
BZ0413	13/12/2017	6	Buzzard	2	12:25:00	300			300		Circling over west edge of conifer plantation	SON
BZ0414	14/12/2017	6	Buzzard	1	08:24:00	180	90	90			Flew from the E perched off site for 1 min and flew back E. Mobbed by HC	SON
BZ0415	19/12/2017	2	Buzzard	1	14:13:00	90	45	45			Hunting	BM
BZ0416	08/01/2018	6	Buzzard	1	14:30:00	30	15	15			Flew from E-W off site just N of the site.	SON
BZ0417	09/01/2018	5	Buzzard	1	11:44:00	20			20		Hunting north end of east Drinagh off site over scrub.	SON
BZ0418	10/01/2018	7	Buzzard	1	12:34:00	10	5	5			Flying north out of scrub to the north west of VP	SON
BZ0419	15/01/2018	4	Buzzard	1	09:19:00	30			30		Flew out of site	BM



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0420	19/01/2018	3	Buzzard	2	09:55:00	90			90		Pair in early display	BM
BZ0421	26/01/2018	3	Buzzard	2	11:23:00	120			120		Display pair	JA
BZ0422	01/02/2018	6	Buzzard	2	12:08:00	180			180		Circling over the tracks S of VP.	SON
BZ0423	05/02/2018	7	Buzzard	1	13:46:00	60		60			Perched off site to the E. Mobbed by HC flew off E.	SON
BZ0424	09/02/2018	7	Buzzard	1	13:14:00	120			120		Flying north- south over scrub north of VP. Circled to south east before flying off south east	SON
BZ0425	14/02/2018	2	Buzzard	1	15:25:00	20	10	10			Hunting	BM
BZ0426	14/02/2018	2	Buzzard	2	15:50:00	30	15	15			Flew into wood area—probably inc. earlier bird	BM
BZ0427	15/02/2018	3	Buzzard	1	14:54:00	60	30	30			Probably one of birds seen yesterday	BM
BZ0428	06/03/2018	6	Buzzard	1	13:57:00	20	10	10			Flying out of scrub S of track to the NE into conifer plantation.	SON
BZ0429	06/03/2018	6	Buzzard	1	14:50:00	180	90	90			Flew out of conifer plantation W glided and flew over scrub N of tracks. Landed in scrub.	SON
BZ0430	13/03/2018	3	Buzzard	2	11:13:00	90			90		Pair in display	BM
BZ0431	13/03/2018	4	Buzzard	1	15:08:00	60	30	30			Flying	BM
BZ0432	15/03/2018	8	Buzzard	2	09:01:00	180			180		Pair in display	SON
BZ0433	24/03/2018	7	Buzzard	3	13:08:00	720			720		Soaring N of VP drifted N.	SON
BZ0434	26/03/2018	3	Buzzard	2	16:22:00	120			120		Pair circling	JA
BZ0001	18/04/2018	8	Buzzard	1	10:46:00	49	9	40			PB4, (Cutover bog) hunting and gliding on wind	JH
BZ0003	19/04/2018	7	Buzzard	1	09:20:00	56			56		GA1, (Improved agricultural grassland) spiralling on wind	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0005	19/04/2018	7	Buzzard	4	11:18:00	196			40	156	WD4, (Conifer plantation) PB4, (Cutover bog) spiralling on wind	JH
BZ0006	19/04/2018	7	Buzzard	1	11:26:00	180			50	130	PB4, (Cutover bog) WD4, (Conifer plantation) spiralling and soaring	JH
BZ0007	19/04/2018	7	Buzzard	4	11:35:00	240				240	GA1, (Improved agricultural grassland) spiralling and soaring	JH
BZ0004	19/04/2018	7	Buzzard	1	11:01:00	230			90	140	WD4, (Conifer plantation) hunting and spiralling	JH
BZ0002	19/04/2018	7	Buzzard	1	09:05:00	64		64			WD4, (Conifer plantation) being mobbed by HC	JH
BZ0008	25/04/2018	6	Buzzard	1	09:52:00	166		42	124		PB4, (Cutover bog) travelling	JH
BZ0010	25/04/2018	6	Buzzard	1	10:26:00	92		92			PB4, (Cutover bog) travelling	JH
BZ0009	25/04/2018	6	Buzzard	1	10:03:00	101			101		PB4, (Cutover bog) soaring on wind	JH
BZ0011	25/04/2018	6	Buzzard	1	10:42:00	125		46	79		PB4, (Cutover bog) soaring on wind	JH
BZ0012	26/04/2018	10	Buzzard	1	08:55:00	129			129		GA1, (Improved agricultural grassland) travelling	JH
BZ0013	26/04/2018	10	Buzzard	1	10:52:00	169	5	164			PB4, (Cutover bog) hunting and landing in scrub	JH
BZ0015	28/04/2018	1	Buzzard	1	10:40:00	138			138		GA1, (Improved agricultural grassland) SOARING AND TRAVELLING	JH
BZ0016	28/04/2018	1	Buzzard	1	10:40:00	160			160		GA1, (Improved agricultural grassland) soaring and travelling	JH
BZ0014	28/04/2018	1	Buzzard	2	09:31:00	327			206	121	GA1, (Improved agricultural grassland) soaring	JH
BZ0017	28/04/2018	1	Buzzard	2	11:27:00	155			155		GA1, (Improved agricultural grassland) soaring	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0024	05/05/2018	2	Buzzard	1	10:48:00	900		120	420	360	GA1, (Improved agricultural grassland) PB4, (Cutover bog) WD4, (Conifer plantation) initially c.300 metres up	P.Troake
BZ0026	05/05/2018	2	Buzzard	1	11:48:00	190		160	30		WD4, (Conifer plantation) initially 15-20 metres, circled up to c.35m; dropped down at end of flight	P.Troake
BZ0030	05/05/2018	2	Buzzard	2	12:08:00	345			120	75	PB4, (Cutover bog) WD4, (Conifer plantation) initially 100-150 metres, circled up to c.200m	P.Troake
BZ0039	05/05/2018	2	Buzzard	1	14:36:00	125		10	115		PB4, (Cutover bog) hunting, c.150 metres, then dropped	P.Troake
BZ0036	05/05/2018	2	Buzzard	1	12:24:00	15					dropped to forest	P.Troake
BZ0046	05/05/2018	2	Buzzard	1	16:00:00	550			445	105	PB4, (Cutover bog) WD4, (Conifer plantation) drifting/circling; stooped down at end of flight	P.Troake
BZ0033	05/05/2018	2	Buzzard	1	12:19:00	30				30	GA1, (Improved agricultural grassland) PB4, (Cutover bog) drifting	P.Troake
BZ0029	05/05/2018	2	Buzzard	1	12:00:00	490			10	480	PB4, (Cutover bog) WD4, (Conifer plantation) circling/drifting; dropped to second bird at end of flight	P.Troake
BZ0028	05/05/2018	2	Buzzard	1	12:00:00	45				45	PB4, (Cutover bog) circling, c.175-200m	P.Troake
BZ0035	05/05/2018	2	Buzzard	2	12:20:00	220			200		GA1, (Improved agricultural grassland) WD4, (Conifer plantation) circling, 60m up; dropped to c.35 metres	P.Troake
BZ0031	05/05/2018	2	Buzzard	3	12:14:00	180				160	GA1, (Improved agricultural grassland) WD4, (Conifer plantation) circling, 400-500 metres; one circled up higher to cloud base	P.Troake



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0037	05/05/2018	2	Buzzard	1	12:24:00	135					circling up, then dropped	P.Troake
BZ0027	05/05/2018	2	Buzzard	2	11:55:00	285			165	120	PB4, (Cutover bog) circling up, c.75-200m, then separated	P.Troake
BZ0041	05/05/2018	2	Buzzard	2	15:42:00	740			240	500	PB4, (Cutover bog) WD4, (Conifer plantation) circling up, 40 metres up to 600 metres; one stooped down to join third bird at end of flight (flight no.28)	P.Troake
BZ0040	05/05/2018	2	Buzzard	1	15:41:00	75		60	15		PB4, (Cutover bog) WD4, (Conifer plantation) circling up, 15-40 metres	P.Troake
BZ0038	05/05/2018	2	Buzzard	1	12:55:00	90				90	PB4, (Cutover bog) circling	P.Troake
BZ0025	05/05/2018	2	Buzzard	1	11:08:00	980		60	810	110	PB4, (Cutover bog) WD4, (Conifer plantation) circled up, then descended, hunting; dropped down low at end of flight	P.Troake
BZ0018	05/05/2018	2	Buzzard	1	10:24:00	150		30	120		GA1, (Improved agricultural grassland) PB4, (Cutover bog) WD4, (Conifer plantation) circled up to c.40 metres	P.Troake
BZ0023	05/05/2018	2	Buzzard	2	10:31:00	980		20	480	480	GA1, (Improved agricultural grassland) PB4, (Cutover bog) WD4, (Conifer plantation) circled up to c.300m then separated	P.Troake
BZ0034	05/05/2018	2	Buzzard	1	12:19:00	90				90	GA1, (Improved agricultural grassland) PB4, (Cutover bog) WD4, (Conifer plantation) c.300 metres up, dropped to join second bird (obs. no.20), c.175 metres	P.Troake
BZ0019	05/05/2018	2	Buzzard	2	10:27:00	30		30			GA1, (Improved agricultural grassland) PB4, (Cutover bog) WD4, (Conifer plantation)	P.Troake



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0020	05/05/2018	2	Buzzard	1	10:27:00	60			60		GA1, (Improved agricultural grassland) PB4, (Cutover bog) WD4, (Conifer plantation)	P.Troake
BZ0021	05/05/2018	2	Buzzard	2	10:28:00	55			55		GA1, (Improved agricultural grassland) PB4, (Cutover bog) WD4, (Conifer plantation)	P.Troake
BZ0022	05/05/2018	2	Buzzard	3	10:29:00	135			135		GA1, (Improved agricultural grassland) PB4, (Cutover bog) WD4, (Conifer plantation)	P.Troake
BZ0032	05/05/2018	2	Buzzard	2	12:17:00	120				120	GA1, (Improved agricultural grassland)	P.Troake
BZ0042	05/05/2018	2	Buzzard	2	15:56:00	70			70		PB4, (Cutover bog) WD4, (Conifer plantation)	P.Troake
BZ0043	05/05/2018	2	Buzzard	1	15:56:00	60				60	PB4, (Cutover bog)	P.Troake
BZ0044	05/05/2018	2	Buzzard	1	15:57:00	90			90		PB4, (Cutover bog) WD4, (Conifer plantation)	P.Troake
BZ0045	05/05/2018	2	Buzzard	2	15:58:00	135			105	30	PB4, (Cutover bog) WD4, (Conifer plantation)	P.Troake
BZ0047	08/05/2018	3	Buzzard	1	17:50:00	171		142	29		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling and Soaring	JH
BZ0048	08/05/2018	3	Buzzard	1	18:06:00	41		41			GA1, (Improved agricultural grassland) Travelling	JH
BZ0049	08/05/2018	3	Buzzard	1	20:34:00	37					GA1, (Improved agricultural grassland) Travelling	JH
BZ0050	10/05/2018	5	Buzzard	1	16:40:00	131			131		GA1, (Improved agricultural grassland) Travelling	JH
BZ0051	10/05/2018	5	Buzzard	1	20:29:00	189		49	140		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Hunting and gliding on wind	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0052	10/05/2018	5	Buzzard	1	20:36:00	115		60			GA1, (Improved agricultural grassland) Hunting and gliding on wind	JH
BZ0053	10/05/2018	5	Buzzard	1	20:58:00	154		90			GA1, (Improved agricultural grassland) Hunting and gliding on wind	JH
BZ0059	15/05/2018	6	Buzzard	1	19:40:00	87		87			PB4, (Cutover bog) WD4, (Conifer plantation) Travelling	JH
BZ0057	15/05/2018	6	Buzzard	1	18:47:00	36	10	26			PB4, (Cutover bog) Landing in Scrub	JH
BZ0055	15/05/2018	6	Buzzard	1	17:27:00	368		368			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and gliding on wind	JH
BZ0060	15/05/2018	6	Buzzard	1	19:46:00	198		198			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and gliding on wind	JH
BZ0058	15/05/2018	6	Buzzard	1	19:27:00	94	94				GA1, (Improved agricultural grassland) Hunting along hedgerow	JH
BZ0054	15/05/2018	6	Buzzard	1	17:23:00	61					GA1, (Improved agricultural grassland) Gliding on wind	JH
BZ0056	15/05/2018	6	Buzzard	1	18:05:00	90		90			PB4, (Cutover bog) WD4, (Conifer plantation) Being mobbed by HC	JH
BZ0061	17/05/2018	7	Buzzard	1	16:21:00	165			165		WD4, (Conifer plantation) GA1, (Improved agricultural grassland) Spiralling on wind	JH
BZ0062	23/05/2018	8	Buzzard	1	16:47:00	38		38			PB4, (Cutover bog) WD4, (Conifer plantation) Travelling	JH
BZ0064	23/05/2018	8	Buzzard	1	17:55:00	129			129		PB4, (Cutover bog) Soaring and Travelling	JH
BZ0063	23/05/2018	8	Buzzard	1	17:22:00	51		51			PB4, (Cutover bog) Hunting and gliding	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0067	25/05/2018	1	Buzzard	1	11:23:00	260			260		W, (Woodland and scrub) PB1, (Raised bog) circling, hunting	P.Troake
BZ0068	25/05/2018	1	Buzzard	1	11:33:00	35					circling	P.Troake
BZ0069	25/05/2018	1	Buzzard	1	13:01:00	55	5	50			PB1, (Raised bog) circling	P.Troake
BZ0065	25/05/2018	1	Buzzard	1	11:08:00	350						P.Troake
BZ0066	25/05/2018	1	Buzzard	1	11:13:00	30						P.Troake
BZ0072	31/05/2018	4	Buzzard	1	17:54:00	202			76	126	PB4, (Cutover bog) WD4, (Conifer plantation) Soaring	JH
BZ0070	31/05/2018	4	Buzzard	1	16:57:00	110		110			WD4, (Conifer plantation) GA1, (Improved agricultural grassland) Gliding on wind	JH
BZ0071	31/05/2018	4	Buzzard	1	17:40:00	70		70			PB4, (Cutover bog) WD4, (Conifer plantation) Being mobbed by Lapwing	JH
BZ0073	31/05/2018	4	Buzzard	1	19:11:00	76			76		PB4, (Cutover bog) WD4, (Conifer plantation) Being mobbed by Lapwing	JH
BZ0392	01/06/2018	5	Buzzard	1	09:55:00	187		24	163		PB4, (Cutover bog) Travelling	JH
BZ0393	01/06/2018	5	Buzzard	1	10:19:00	44		44			PB4, (Cutover bog) Travelling	JH
BZ0391	01/06/2018	5	Buzzard	1	08:58:00	252			182	70	PB4, (Cutover bog) GA1, (Improved agricultural grassland) Soaring	JH
BZ0394	01/06/2018	5	Buzzard	1	10:40:00	177			81	96	PB4, (Cutover bog) Soaring	JH
BZ0395	01/06/2018	5	Buzzard	1	12:34:00	254			159	95	PB4, (Cutover bog) Soaring	JH
BZ0396	01/06/2018	5	Buzzard	1	13:17:00	411			260	151	PB4, (Cutover bog) Soaring	JH
BZ0397	01/06/2018	5	Buzzard	2	14:11:00	261			261		PB4, (Cutover bog) Displaying	JH
BZ0399	05/06/2018	1	Buzzard	2	15:25:00	158			122	36	PB4, (Cutover bog) WN7, (Bog woodland) Travelling	JK



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0082	05/06/2018	6	Buzzard	1	11:39:00	83		83			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
BZ0076	05/06/2018	6	Buzzard	1	09:07:00	207			113	94	PB4, (Cutover bog) GA1, (Improved agricultural grassland) Soaring and being mobbed by HC	JH
BZ0077	05/06/2018	6	Buzzard	1	09:26:00	204			88	116	PB4, (Cutover bog) Soaring	JH
BZ0079	05/06/2018	6	Buzzard	1	09:59:00	287			94	193	PB4, (Cutover bog) Soaring	JH
BZ0080	05/06/2018	6	Buzzard	1	11:02:00	328			247	81	PB4, (Cutover bog) GA1, (Improved agricultural grassland) Soaring	JH
BZ0083	05/06/2018	6	Buzzard	1	11:42:00	90				90	GA1, (Improved agricultural grassland) Soaring	JH
BZ0088	05/06/2018	6	Buzzard	3	13:23:00	314			142	172	PB4, (Cutover bog) GA1, (Improved agricultural grassland) Soaring	JH
BZ0084	05/06/2018	6	Buzzard	1	11:53:00	131	20	111			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Landing in Scrub	JH
BZ0087	05/06/2018	6	Buzzard	1	12:56:00	64	24	40			PB4, (Cutover bog) Hunting and landing in Scrub	JH
BZ0074	05/06/2018	6	Buzzard	1	08:02:00	56		56			PB4, (Cutover bog) Hunting and Flying on	JH
BZ0075	05/06/2018	6	Buzzard	1	08:23:00	46	46				PB4, (Cutover bog) Hunting and Flying on	JH
BZ0086	05/06/2018	6	Buzzard	1	12:45:00	114	10	104			PB4, (Cutover bog) Hunting and Flying on	JH
BZ0081	05/06/2018	6	Buzzard	1	11:15:00	149		54	95		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Gliding on Wind	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0078	05/06/2018	6	Buzzard	1	09:38:00	103		70	33		PB4, (Cutover bog) Flying and Calling	JH
BZ0085	05/06/2018	6	Buzzard	1	12:22:00	56	56				PB4, (Cutover bog) GA1, (Improved agricultural grassland) Being mobbed by HC	JH
BZ0091	11/06/2018	7	Buzzard	3	11:54:00	329		133	196		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Soaring	JH
BZ0093	11/06/2018	7	Buzzard	2	12:53:00	160			160		GA1, (Improved agricultural grassland) Soaring	JH
BZ0089	11/06/2018	7	Buzzard	1	10:40:00	96	36	60			PB4, (Cutover bog) Hunting and gliding on wind	JH
BZ0090	11/06/2018	7	Buzzard	1	11:05:00	59		59			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Hunting and gliding on wind	JH
BZ0092	11/06/2018	7	Buzzard	1	12:38:00	412		194	218		GA1, (Improved agricultural grassland) PB4, (Cutover bog) Hunting and gliding on wind	JH
BZ0094	11/06/2018	7	Buzzard	1	14:01:00	171		171			PB4, (Cutover bog) Hunting and gliding on wind	JH
BZ0096	14/06/2018	9	Buzzard	1	12:59:00	38	38				GA1, (Improved agricultural grassland) WD4, (Conifer plantation) Travelling	JH
BZ0098	14/06/2018	9	Buzzard	2	15:03:00	145				145	PB4, (Cutover bog) WD4, (Conifer plantation) Soaring	JH
BZ0398	14/06/2018	9	Buzzard	1	10:27:00	192		40	152		PB4, (Cutover bog) Hunting and Soaring on wind	JH
BZ0099	14/06/2018	9	Buzzard	1	15:14:00	190			40	150	GA1, (Improved agricultural grassland) WD4, (Conifer plantation) Hunting and Soaring	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0100	14/06/2018	9	Buzzard	1	15:14:00	322			92	230	GA1, (Improved agricultural grassland) WD4, (Conifer plantation) Hunting and Soaring	JH
BZ0095	14/06/2018	9	Buzzard	1	09:26:00	127	12	115			PB4, (Cutover bog) Hunting and landing in Scrub	JH
BZ0097	14/06/2018	9	Buzzard	1	14:41:00	36	36				PB4, (Cutover bog) Hunting and landing in Scrub	JH
BZ0102	18/06/2018	8	Buzzard	1	12:46:00	161		161			PB4, (Cutover bog) WD4, (Conifer plantation) Travelling	JH
BZ0101	18/06/2018	8	Buzzard	1	11:28:00	18	18				WD4, (Conifer plantation) PB4, (Cutover bog) Landing and perching on telegraph pole	JH
BZ0105	20/06/2018	10	Buzzard	2	12:58:00	258			105	153	PB4, (Cutover bog) Soaring and gliding on wind	JH
BZ0106	20/06/2018	10	Buzzard	1	13:15:00	152		20	85	47	GA1, (Improved agricultural grassland) Soaring and gliding on wind	JH
BZ0107	20/06/2018	10	Buzzard	2	13:22:00	100				100	PB4, (Cutover bog) Soaring	JH
BZ0103	20/06/2018	10	Buzzard	1	09:20:00	34	34				PB4, (Cutover bog) Hunting and landing in Scrub	JH
BZ0108	20/06/2018	10	Buzzard	1	13:50:00	81	20	61			PB4, (Cutover bog) Hunting and landing in Scrub	JH
BZ0104	20/06/2018	10	Buzzard	1	09:24:00	152	10	142			PB4, (Cutover bog) Hunting and gliding on wind	JH
BZ0109	20/06/2018	10	Buzzard	1	13:54:00	112	16	96			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Hunting and Flying on	JH
BZ0400	26/06/2018	4	Buzzard	1	14:25:00	62			62		WN7, (Bog woodland) Soaring + Travelling	JK



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0401	26/06/2018	4	Buzzard	2	15:05:00	185			185		WN7, (Bog woodland) Soaring + Travelling	JK
BZ0114	10/07/2018	6	Buzzard	1	13:34:00	107		107			PB4, (Cutover bog) WD4, (Conifer plantation) Travelling	JH
BZ0115	10/07/2018	6	Buzzard	1	13:46:00	210			90	120	PB4, (Cutover bog) Spiralling upwards	JH
BZ0112	10/07/2018	6	Buzzard	1	10:56:00	240				240	GA1, (Improved agricultural grassland) Spiralling Flight	JH
BZ0110	10/07/2018	6	Buzzard	1	10:34:00	220			220		GA1, (Improved agricultural grassland) Soaring and Hunting	JH
BZ0111	10/07/2018	6	Buzzard	1	10:38:00	135			135		GA1, (Improved agricultural grassland) Soaring and Hunting	JH
BZ0113	10/07/2018	6	Buzzard	1	13:08:00	80		80			GA1, (Improved agricultural grassland) Landing in scrub	JH
BZ0117	11/07/2018	7	Buzzard	1	13:03:00	52	20	32			GA1, (Improved agricultural grassland) Landing in hedgerow	JH
BZ0120	11/07/2018	7	Buzzard	1	15:17:00	420	10	10	400		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Hunting, gliding on wind and landing in scrub	JH
BZ0116	11/07/2018	7	Buzzard	1	11:03:00	288			288		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Hunting and gliding on wind	JH
BZ0118	11/07/2018	7	Buzzard	1	14:12:00	456			182	274	GA1, (Improved agricultural grassland) PB4, (Cutover bog) Hunting and gliding on wind	JH
BZ0119	11/07/2018	7	Buzzard	1	15:01:00	112		112			GA1, (Improved agricultural grassland) Hunting and flying on	JH



Vantage Point Survey												
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BZ0121	12/07/2018	9	Buzzard	1	13:50:00	24	24				PB4, (Cutover bog) GA1, (Improved agricultural grassland) Landing on telegraph pole - offsite	JH
BZ0122	13/07/2018	10	Buzzard	1	11:05:00	310			220	90	GA1, (Improved agricultural grassland) Soaring	JH
BZ0123	13/07/2018	10	Buzzard	1	15:23:00	285			130	155	PB4, (Cutover bog) Soaring	JH
BZ0124	18/07/2018	2	Buzzard	1	09:13:00	92	10	10	72		PB4, (Cutover bog) WD4, (Conifer plantation) Landing in WD4	JH
BZ0125	18/07/2018	2	Buzzard	1	15:12:00	20	20				WD4, (Conifer plantation) PB4, (Cutover bog) Landing in scrub	JH
BZ0127	19/07/2018	3	Buzzard	1	11:27:00	134		63	71		PB4, (Cutover bog) Soaring	JH
BZ0128	19/07/2018	3	Buzzard	2	14:31:00	154			53	101	PB4, (Cutover bog) Soaring	JH
BZ0129	19/07/2018	3	Buzzard	1	14:40:00	213			49	164	GA1, (Improved agricultural grassland) PB4, (Cutover bog) Soaring	JH
BZ0126	19/07/2018	3	Buzzard	1	09:51:00	54	10	10	34		PB4, (Cutover bog) Landing in scrub	JH
BZ0130	23/07/2018	4	Buzzard	1	10:54:00	192		192			PB4, (Cutover bog) WD4, (Conifer plantation) Travelling	JH
BZ0131	23/07/2018	4	Buzzard	1	13:46:00	283				283	PB4, (Cutover bog) WD4, (Conifer plantation) Soaring	JH
BZ0132	01/08/2018	1	Buzzard	1	09:24:00	58		58			PB4, (Cutover bog) Travelling	JH
BZ0133	01/08/2018	1	Buzzard	1	13:09:00	80	30	50			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and landing in Scrub	JH
BZ0134	01/08/2018	1	Buzzard	1	13:19:00	134	134				PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and landing in Scrub	JH



Vantage Point Survey												
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BZ0136	01/08/2018	1	Buzzard	1	15:12:00	106	20	86			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and landing in Scrub	JH
BZ0135	01/08/2018	1	Buzzard	1	13:58:00	66	66				PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and flying on. Juvenile Bird	JH
BZ0137	03/08/2018	2	Buzzard	1	08:51:00	56		56			PB4, (Cutover bog) WD4, (Conifer plantation) Travelling	JH
BZ0142	03/08/2018	2	Buzzard	1	12:28:00	94			94		PB4, (Cutover bog) WD4, (Conifer plantation) Travelling	JH
BZ0143	03/08/2018	2	Buzzard	1	14:27:00	54	10	44			PB4, (Cutover bog) WD4, (Conifer plantation) Landing in WD4	JH
BZ0138	03/08/2018	2	Buzzard	1	09:02:00	324		69	103	152	GA1, (Improved agricultural grassland) PB4, (Cutover bog) WD4, (Conifer plantation) Hunting, gliding on wind and landing in WD4	JH
BZ0141	03/08/2018	2	Buzzard	1	12:10:00	424	10	10	105	299	PB4, (Cutover bog) WD4, (Conifer plantation) Hunting, gliding on wind and landing in WD4	JH
BZ0140	03/08/2018	2	Buzzard	1	11:57:00	188			131	57	PB4, (Cutover bog) WD4, (Conifer plantation) GA1, (Improved agricultural grassland) Hunting and Spiralling on wind	JH
BZ0139	03/08/2018	2	Buzzard	1	09:51:00	90		90			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and gliding on wind	JH
BZ0144	07/08/2018	3	Buzzard	1	10:47:00	59	10	49			PB4, (Cutover bog) Hunting and landing in Scrub	JH
BZ0145	07/08/2018	3	Buzzard	1	11:00:00	34	10	24			PB4, (Cutover bog) Hunting and landing in Scrub	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0146	08/08/2018	4	Buzzard	1	14:07:00	130			130		PB4, (Cutover bog) Hunting and gliding on wind	JH
BZ0147	13/08/2018	5	Buzzard	1	12:51:00	302			55	247	PB4, (Cutover bog) GA1, (Improved agricultural grassland) Soaring	JH
BZ0148	13/08/2018	5	Buzzard	1	13:36:00	335			85	250	PB4, (Cutover bog) Hunting and Soaring Upward Flight	JH
BZ0149	14/08/2018	6	Buzzard	3	09:00:00	82		82			GA1, (Improved agricultural grassland) Flying and Calling	JH
BZ0150	21/08/2018	8	Buzzard	1	11:44:00	152			152		PB4, (Cutover bog) WD4, (Conifer plantation) Soaring upward flight	JH
BZ0152	21/08/2018	8	Buzzard	2	12:12:00	252			128	124	PB4, (Cutover bog) Soaring upward flight	JH
BZ0153	21/08/2018	8	Buzzard	3	12:19:00	240			240		PB4, (Cutover bog) Soaring and flying on	JH
BZ0151	21/08/2018	8	Buzzard	1	12:02:00	148	20	128			PB4, (Cutover bog) Hunting and landing in Scrub	JH
BZ0158	23/08/2018	10	Buzzard	1	13:47:00	92		92			PB4, (Cutover bog) Travelling	JH
BZ0159	23/08/2018	10	Buzzard	1	13:47:00	383		20	123	240	PB4, (Cutover bog) Soaring	JH
BZ0156	23/08/2018	10	Buzzard	1	13:34:00	164	34	130			PB4, (Cutover bog) Hunting, gliding and landing in Scrub	JH
BZ0157	23/08/2018	10	Buzzard	1	13:38:00	99	99				PB4, (Cutover bog) Hunting, gliding and landing in Scrub	JH
BZ0154	23/08/2018	10	Buzzard	1	11:12:00	92	92				PB4, (Cutover bog) Hunting and landing in Scrub	JH
BZ0155	23/08/2018	10	Buzzard	1	12:55:00	119		119			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Hunting and Flying on.	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0162	03/09/2018	1	Buzzard	1	12:02:00	201			77	124	PB4, (Cutover bog) Soaring	JH
BZ0160	03/09/2018	1	Buzzard	1	10:41:00	356			172	184	GA1, (Improved agricultural grassland) PB4, (Cutover bog) Landing in Scrub	JH
BZ0161	03/09/2018	1	Buzzard	2	10:57:00	40	10	30			PB4, (Cutover bog) Landing in Scrub	JH
BZ0164	04/09/2018	2	Buzzard	1	10:18:00	42	10	32			PB4, (Cutover bog) WD4, (Conifer plantation) Travelling and landing in scrub	JH
BZ0163	04/09/2018	2	Buzzard	1	08:34:00	36	36				PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and landing in scrub	JH
BZ0165	04/09/2018	2	Buzzard	1	11:10:00	55	55				PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and landing in scrub	JH
BZ0166	04/09/2018	2	Buzzard	1	12:09:00	88	27	61			WD4, (Conifer plantation) PB4, (Cutover bog) Hunting and landing in scrub	JH
BZ0169	05/09/2018	3	Buzzard	2	11:13:00	327			35	292	PB4, (Cutover bog) Spiralling	JH
BZ0167	05/09/2018	3	Buzzard	1	08:13:00	24	24				PB4, (Cutover bog) Landing in Scrub	JH
BZ0168	05/09/2018	3	Buzzard	1	10:23:00	31	31				PB4, (Cutover bog) Hunting and landing in scrub	JH
BZ0170	06/09/2018	4	Buzzard	1	08:31:00	28	28				PB4, (Cutover bog) Hunting and Landing in heavy cover	JH
BZ0171	07/09/2018	5	Buzzard	1	11:30:00	254	20	45	189		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Soaring	JH
BZ0172	10/09/2018	6	Buzzard	1	08:03:00	97		97			GA1, (Improved agricultural grassland) PB4, (Cutover bog) Travelling	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0174	28/09/2018	10	Buzzard	2	12:25:00	181			84	97	PB4, (Cutover bog) Soaring	JH
BZ0175	28/09/2018	10	Buzzard	2	12:34:00	261			261		PB4, (Cutover bog) Soaring	JH
BZ0173	28/09/2018	10	Buzzard	1	12:10:00	42	42				PB4, (Cutover bog) Hunting and landing in scrub	JH
BZ0176	04/10/2018	1	Buzzard	2	14:15:00	114			114		GA1, (Improved agricultural grassland) WD4, (Conifer plantation) Spiralling	JH
BZ0178	09/10/2018	2	Buzzard	1	14:42:00	22	22				GA1, (Improved agricultural grassland) Hunting and Flying on	JH
BZ0179	09/10/2018	2	Buzzard	1	14:46:00	94		94			GA1, (Improved agricultural grassland) Hunting and Flying on	JH
BZ0181	09/10/2018	2	Buzzard	2	18:10:00	116	40	76			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Hunting and Flying on	JH
BZ0177	09/10/2018	2	Buzzard	1	14:27:00	38	38				GA1, (Improved agricultural grassland) Hunting along Hedgerow	JH
BZ0180	09/10/2018	2	Buzzard	2	17:43:00	208		45	163		GA1, (Improved agricultural grassland) WD4, (Conifer plantation) Gliding on Wind	JH
BZ0183	10/10/2018	5	Buzzard	1	13:55:00	720		690	30		GA1, (Improved agricultural grassland) travelling, circling	TR
BZ0184	10/10/2018	5	Buzzard	1	14:25:00	720		420	300		travelling, circling	TR
BZ0186	10/10/2018	5	Buzzard	2	17:10:00	480		480			WD4, (Conifer plantation) PB4, (Cutover bog) travelling	TR
BZ0187	10/10/2018	5	Buzzard	1	18:20:00	70			70		GA1, (Improved agricultural grassland) travelling	TR
BZ0182	10/10/2018	5	Buzzard	2	13:22:00	600		100	500		PB4, (Cutover bog) Soaring	TR
BZ0185	10/10/2018	5	Buzzard	3	15:15:00	1080		500	500	80	PB4, (Cutover bog) circling, travelling	TR



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0188	11/10/2018	6	Buzzard	1	13:51:00	60			60		(Mixed) broadleaved woodland PB4, (Cutover bog)	TR
BZ0189	11/10/2018	6	Buzzard	1	15:50:00	30	30					TR
BZ0190	11/10/2018	6	Buzzard	1	17:45:00	210		60	150		GA1, (Improved agricultural grassland)	TR
BZ0191	12/10/2018	7	Buzzard	1	14:50:00	60	60				GA1, (Improved agricultural grassland) travelling	TR
BZ0192	12/10/2018	7	Buzzard	2	19:05:00	180	800	100			PB4, (Cutover bog) WD4, (Conifer plantation) travelling	TR
BZ0196	16/10/2018	3	Buzzard	1	14:41:00	423		38	344	41	PB4, (Cutover bog) Soaring and Spiralling upward flight	JH
BZ0195	16/10/2018	3	Buzzard	2	14:04:00	114			114		PB4, (Cutover bog) Soaring	JH
BZ0198	16/10/2018	3	Buzzard	1	16:48:00	93			93		GA1, (Improved agricultural grassland) Soaring	JH
BZ0194	16/10/2018	3	Buzzard	1	14:02:00	34		34			PB4, (Cutover bog) WS2, (Immature woodland) Landing in Beech Trees	JH
BZ0199	16/10/2018	3	Buzzard	1	16:54:00	253	20	233			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Hunting and Soaring	JH
BZ0193	16/10/2018	3	Buzzard	1	13:22:00	98			98		GA1, (Improved agricultural grassland) Gliding on Wind	JH
BZ0197	16/10/2018	3	Buzzard	1	15:24:00	116			116		GA1, (Improved agricultural grassland) Being Mobbed by HC	JH
BZ0200	16/10/2018	8	Buzzard	1	13:45:00	145		145			PB4, (Cutover bog) Circling	TR
BZ0201	16/10/2018	8	Buzzard	2	14:30:00	480		180	200	100	PB4, (Cutover bog) circling	TR
BZ0202	16/10/2018	8	Buzzard	1	15:00:00	400		400			PB4, (Cutover bog) circling	TR
BZ0203	16/10/2018	8	Buzzard	1	16:55:00	10		10			PB4, (Cutover bog) Circling	TR



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0205	17/10/2018	9	Buzzard	1	17:50:00	10		10			GA1, (Improved agricultural grassland) perched then travelling	TR
BZ0204	17/10/2018	9	Buzzard	1	15:45:00	105		80	25		PB4, (Cutover bog) circling	TR
BZ0207	18/10/2018	10	Buzzard	1	13:20:00	215		30	175		PB4, (Cutover bog) circling, travelling	TR
BZ0208	18/10/2018	10	Buzzard	1	14:12:00	180				180	PB4, (Cutover bog) circling	TR
BZ0210	23/10/2018	4	Buzzard	1	14:04:00	63		63			PB4, (Cutover bog) Travelling	JH
BZ0209	23/10/2018	4	Buzzard	1	13:38:00	422	40	382			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and landing in WD4	JH
BZ0213	07/11/2018	5	Buzzard	1	11:40:00	30	20				PB4, (Cutover bog) travelling, landing	TR
BZ0211	07/11/2018	5	Buzzard	1	09:20:00	80	80				GA1, (Improved agricultural grassland) WD4, (Conifer plantation) travelling	TR
BZ0212	07/11/2018	5	Buzzard	1	11:18:00	250			250		GA1, (Improved agricultural grassland) PB4, (Cutover bog)	TR
BZ0214	07/11/2018	6	Buzzard	1	13:25:00	210			210		PB4, (Cutover bog)	TR
BZ0215	07/11/2018	6	Buzzard	1	13:55:00	100			100		PB4, (Cutover bog)	TR
BZ0218	23/11/2018	3	Buzzard	1	13:08:00	183			183		PB4, (Cutover bog) WD4, (Conifer plantation) Soaring	JH
BZ0217	23/11/2018	3	Buzzard	1	12:17:00	118	30	88			PB4, (Cutover bog) Hunting over PB4 and landing in Scrub	JH
BZ0216	23/11/2018	5	Buzzard	1	07:45:00	60	60				PB4, (Cutover bog) GA1, (Improved agricultural grassland) travelling	TR
BZ0219	07/12/2018	6	Buzzard	1	12:44:00	72		72			PB4, (Cutover bog) Gliding on wind and landing in Scrub	JH
BZ0220	12/12/2018	4	Buzzard	1	12:50:00	15		15			PB4, (Cutover bog) circling	TR



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0221	04/01/2019	1	Buzzard	1	13:32:00	50	50				PB4, (Cutover bog) WD4, (Conifer plantation) FL2, (Acid oligotrophic lakes) Travelling	JH
BZ0222	11/01/2019	3	Buzzard	1	13:10:00	65			65		PB4, (Cutover bog) Travelling	JH
BZ0223	11/01/2019	3	Buzzard	1	13:14:00	262				262	PB4, (Cutover bog) WD4, (Conifer plantation) Spiralling and gliding on wind	JH
BZ0224	16/01/2019	4	Buzzard	1	11:46:00	36			36		PB1, (Raised bog) PB4, (Cutover bog) Travelling	JH
BZ0225	16/01/2019	4	Buzzard	1	13:16:00	97	20	77			PB4, (Cutover bog) Landing in Conifer Tree on PB4	JH
BZ0226	16/01/2019	4	Buzzard	1	17:08:00	110	30	80			PB4, (Cutover bog) WD4, (Conifer plantation) Harassing K and flying on	JH
BZ0228	05/02/2019	1	Buzzard	1	13:06:00	82		82			PB1, (Raised bog) Mixed broadleaved/conifer woodland Soaring and flying on	JH
BZ0227	05/02/2019	1	Buzzard	1	13:03:00	37	10	27			PB1, (Raised bog) Landing in Scrub	JH
BZ0229	05/02/2019	1	Buzzard	1	13:10:00	135		135			GA1, (Improved agricultural grassland) Hunting and gliding on wind	JH
BZ0230	05/02/2019	1	Buzzard	1	13:24:00	94		94			PB1, (Raised bog) Being mobbed by Hooded Crow	JH
BZ0231	07/02/2019	4	Buzzard	2	14:02:00	39		39			PB4, (Cutover bog) WD4, (Conifer plantation) Travelling	JH
BZ0232	07/02/2019	4	Buzzard	1	14:31:00	62	20	42			PB4, (Cutover bog) WD4, (Conifer plantation) Landing in WD4	JH
BZ0233	12/02/2019	3	Buzzard	1	12:12:00	30		30			PB4, (Cutover bog) Travelling	JH
BZ0238	12/02/2019	3	Buzzard	1	15:50:00	32	32				PB4, (Cutover bog) WD4, (Conifer plantation) Travelling	JH



Vantage Point Survey												
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BZ0239	12/02/2019	3	Buzzard	1	15:53:00	105	15	90			PB4, (Cutover bog) WD4, (Conifer plantation) Travelling	JH
BZ0237	12/02/2019	3	Buzzard	2	14:24:00	62	62				PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and landing in Scrub	JH
BZ0236	12/02/2019	3	Buzzard	1	14:12:00	47	47				PB4, (Cutover bog) Hunting along Scrub	JH
BZ0234	12/02/2019	3	Buzzard	1	13:31:00	178	20	158			PB4, (Cutover bog) Being mobbed by Hooded Crow	JH
BZ0235	12/02/2019	3	Buzzard	1	13:44:00	50	10	40			PB4, (Cutover bog) Being mobbed by Hooded Crow	JH
BZ0241	13/02/2019	2	Buzzard	2	13:02:00	72	72				WD4, (Conifer plantation) Travelling	JH
BZ0240	13/02/2019	2	Buzzard	1	13:39:00	124		124			PB4, (Cutover bog) WD4, (Conifer plantation) Soaring/Travelling	JH
BZ0247	13/02/2019	2	Buzzard	1	16:10:00	61		61			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Soaring and Hunting	JH
BZ0242	13/02/2019	2	Buzzard	1	13:09:00	213	160	53			PB4, (Cutover bog) WD4, (Conifer plantation) Soaring	JH
BZ0243	13/02/2019	2	Buzzard	1	13:19:00	48		48			GA1, (Improved agricultural grassland) Soaring	JH
BZ0244	13/02/2019	2	Buzzard	1	14:16:00	40			40		GA1, (Improved agricultural grassland) WD4, (Conifer plantation) Soaring	JH
BZ0246	13/02/2019	2	Buzzard	1	14:49:00	35		35			PB4, (Cutover bog) WD4, (Conifer plantation) Soaring	JH
BZ0248	13/02/2019	2	Buzzard	1	16:55:00	52			52		PB4, (Cutover bog) WD4, (Conifer plantation) Soaring	JH
BZ0245	13/02/2019	2	Buzzard	1	14:23:00	21	21				PB4, (Cutover bog) Landing on PB4	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0252	14/02/2019	1	Buzzard	1	16:56:00	65		65			GA1, (Improved agricultural grassland) Mixed broadleaved/conifer woodland Travelling	JH
BZ0253	14/02/2019	1	Buzzard	1	17:00:00	92	25	67			PB1, (Raised bog) Mixed broadleaved/conifer woodland Soaring and landing in Woodland	JH
BZ0254	14/02/2019	1	Buzzard	1	17:08:00	46	10	36			Mixed broadleaved/conifer woodland GA1, (Improved agricultural grassland) Soaring and landing in Woodland	JH
BZ0249	14/02/2019	1	Buzzard	2	16:33:00	70			70		GA1, (Improved agricultural grassland) WD4, (Conifer plantation) Soaring	JH
BZ0251	14/02/2019	1	Buzzard	1	16:50:00	28	28				PB1, (Raised bog) Mixed broadleaved/conifer woodland Landing in Woodland	JH
BZ0250	14/02/2019	1	Buzzard	1	16:46:00	77	20	57			Landing in Scrub	JH
BZ0255	01/03/2019	1	Buzzard	3	10:44:00	132			132		PB4, (Cutover bog) WD4, (Conifer plantation) GA1, (Improved agricultural grassland) Soaring.	JH
BZ0256	01/03/2019	1	Buzzard	2	11:24:00	104			104		GA1, (Improved agricultural grassland) WD4, (Conifer plantation) Soaring	JH
BZ0257	01/03/2019	1	Buzzard	3	11:48:00	270				270	PB4, (Cutover bog) WD4, (Conifer plantation) GA1, (Improved agricultural grassland) Soaring	JH
BZ0264	07/03/2019	4	Buzzard	1	12:06:00	104		104			PB4, (Cutover bog) WD4, (Conifer plantation) Travelling	JH
BZ0259	07/03/2019	4	Buzzard	1	10:09:00	151	20	60	71		PB4, (Cutover bog) WD4, (Conifer plantation) Soaring and landing in WD4	JH



Vantage Point Survey												
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BZ0261	07/03/2019	4	Buzzard	2	11:12:00	180	30	150			PB4, (Cutover bog) WD4, (Conifer plantation) Soaring and landing in WD4	JH
BZ0258	07/03/2019	4	Buzzard	1	09:39:00	52	10	42			PB4, (Cutover bog) WD4, (Conifer plantation) Landing in WD4	JH
BZ0262	07/03/2019	4	Buzzard	1	11:44:00	212	50	162			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and landing in WD4	JH
BZ0263	07/03/2019	4	Buzzard	1	11:56:00	259	60	119	80		PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and landing in Scrub	JH
BZ0260	07/03/2019	4	Buzzard	2	10:42:00	316		40	276		PB4, (Cutover bog) WD4, (Conifer plantation) Display Flight	JH
BZ0265	11/03/2019	2	Buzzard	1	08:41:00	70		70			PB4, (Cutover bog) WD4, (Conifer plantation) Landing in WD4	JH
BZ0266	15/03/2019	3	Buzzard	1	11:10:00	52		52			GA1, (Improved agricultural grassland) Being Mobbed by HC	JH
BZ0267	04/04/2019	1	Buzzard	1	15:48:09	123			123		GA1, (Improved agricultural grassland) Travelling	JH
BZ0268	04/04/2019	1	Buzzard	1	15:54:03	75			75		PB1, (Raised bog) WD4, (Conifer plantation) Travelling	JH
BZ0270	04/04/2019	1	Buzzard	1	16:13:50	140			140		WD4, (Conifer plantation) GA1, (Improved agricultural grassland) Soaring	JH
BZ0269	04/04/2019	1	Buzzard	1	16:04:54	48		48			PB1, (Raised bog) WD4, (Conifer plantation) Landing intree line	JH
BZ0271	11/04/2019	2	Buzzard	2	14:56:22	196			196		PB4, (Cutover bog) Upward Soaring flight	JH
BZ0273	11/04/2019	2	Buzzard	1	15:42:18	102			102		PB4, (Cutover bog) Upward Soaring flight	JH



Vantage Point Survey												
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BZ0272	11/04/2019	2	Buzzard	1	15:08:01	128		40	88		PB4, (Cutover bog) WD4, (Conifer plantation) Landing in WD4	JH
BZ0274	11/04/2019	2	Buzzard	1	17:23:31	48		48			PB4, (Cutover bog) Landing in Scrub	JH
BZ0277	16/04/2019	3	Buzzard	1	15:47:22	196			196		PB4, (Cutover bog) Upward soaring flight	JH
BZ0276	16/04/2019	3	Buzzard	1	15:15:36	71		71			GA1, (Improved agricultural grassland) Travelling	JH
BZ0275	16/04/2019	3	Buzzard	1	15:05:45	132			132		GA1, (Improved agricultural grassland) PB4, (Cutover bog) Soaring	JH
BZ0278	16/04/2019	3	Buzzard	1	16:04:34	428		70	358		GA1, (Improved agricultural grassland) PB4, (Cutover bog) Soaring	JH
BZ0279	16/04/2019	3	Buzzard	1	17:55:55	75		75			GA1, (Improved agricultural grassland) Landing in hedgerow	JH
BZ0280	18/04/2019	10	Buzzard	1	16:39:00	249		58	189		PB4, (Cutover bog) Soaring	JH
BZ0281	23/04/2019	9	Buzzard	1	16:18:00	330			330		PB4, (Cutover bog) high circling	TR
BZ0282	23/04/2019	9	Buzzard	1	16:42:00	120			120		PB4, (Cutover bog) high circling	TR
BZ0283	23/04/2019	9	Buzzard	1	17:19:59	50			50		PB4, (Cutover bog) circling area	TR
BZ0284	25/04/2019	8	Buzzard	2	15:48:00	540			540		PB4, (Cutover bog) displaying	TR
BZ0285	26/04/2019	6	Buzzard	1	16:00:11	480		80	400		PB4, (Cutover bog) GA1, (Improved agricultural grassland) high circling gliding on wind	TR
BZ0286	26/04/2019	6	Buzzard	2	16:02:00	120			120		WD4, (Conifer plantation) flying together interacting briefly	TR
BZ0288	29/04/2019	6	Buzzard	1	19:43:53	195			195		GA1, (Improved agricultural grassland) high circling	TR
BZ0289	29/04/2019	6	Buzzard	1	20:51:45	200		50	250		GA1, (Improved agricultural grassland) circling	TR



Vantage Point Survey												
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BZ0287	29/04/2019	7	Buzzard	1	16:00:00	70		20	50		PB4, (Cutover bog) disturbed by dog walker, alarm calling briefly	TR
BZ0290	30/04/2019	5	Buzzard	1	20:28:15	20		20			perching	TR
BZ0357	07/05/2019	6	Buzzard	2	08:55:00	242			242		WN7, (Bog woodland) Soaring	JK
BZ0358	07/05/2019	6	Buzzard	1	09:35:00	168			168		WN7, (Bog woodland) Soaring	JK
BZ0291	09/05/2019	1	Buzzard	1	10:42:07	15		5	10		PB4, (Cutover bog) circling high and diving down into scrub. possible breeding area	TR
BZ0359	09/05/2019	9	Buzzard	2	09:11:00	221			221		WN7, (Bog woodland) Soaring	JK
BZ0360	09/05/2019	9	Buzzard	1	09:35:00	165			165		WN7, (Bog woodland) Soaring	JK
BZ0293	10/05/2019	2	Buzzard	1	09:30:00	300			270		PB4, (Cutover bog) displaying	TR
BZ0292	10/05/2019	2	Buzzard	1	05:10:00	50						TR
NOT DRAWN	10/05/2019	8	Buzzard	2	05:22:00	121			121		WN7, (Bog woodland) Soaring	JK
BZ0361	10/05/2019	8	Buzzard	1	06:31:00	97			97		WN7, (Bog woodland) Soaring	JK
BZ0362	10/05/2019	8	Buzzard	1	09:11	89			89		WN7, (Bog woodland) Soaring	JK
BZ0363	10/05/2019	8	Buzzard	1	09:25:00	107			107		WN7, (Bog woodland) Soaring	JK
BZ0294	16/05/2019	3	Buzzard	1	06:41:18	30		30			PB4, (Cutover bog) WD4, (Conifer plantation) gliding low	TR
BZ0364	21/05/2019	7	Buzzard	2	10:12:00	311			311		PB4, (Cutover bog) WN7, (Bog woodland)	JK
BZ0365	21/05/2019	7	Buzzard	1	10:35:00	168			168		PB4, (Cutover bog) WN7, (Bog woodland)	JK
BZ0366	21/05/2019	7	Buzzard	2	10:50:00	209			209		PB4, (Cutover bog) WN7, (Bog woodland)	JK
BZ0367	22/05/2019	5	Buzzard	1	09:45:00	171			171		WN7, (Bog woodland)	JK



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0368	24/05/2019	10	Buzzard	1	08:16:00	128			128		PB4, (Cutover bog) WN7, (Bog woodland)	JK
BZ0369	24/05/2019	10	Buzzard	1	08:35:00	43		43			PB4, (Cutover bog) WN7, (Bog woodland)	JK
BZ0370	03/06/2019	4	Buzzard	1	12:15:00	174			174		WN7, (Bog woodland) PB4, (Cutover bog) Soaring	JK
BZ0295	06/06/2019	1	Buzzard	2	13:51:53	396			396		PB4, (Cutover bog) WD4, (Conifer plantation) Upward soaring flight	JH
BZ0296	06/06/2019	1	Buzzard	1	14:33:55	160		160			PB4, (Cutover bog) Hunting and landing in scrub	JH
BZ0371	06/06/2019	6	Buzzard	1	11:09:00	38			38		GA1, (Improved agricultural grassland) WN7, (Bog woodland) Soaring	JK
BZ0372	06/06/2019	6	Buzzard	1	11:39:00	87			87		GA1, (Improved agricultural grassland) WN7, (Bog woodland) Soaring	JK
BZ0373	06/06/2019	6	Buzzard	2	14:47:00	53		53			GA1, (Improved agricultural grassland) WN7, (Bog woodland) Soaring	JK
BZ0374	06/06/2019	6	Buzzard	2	15:20:00	108			108		GA1, (Improved agricultural grassland) WN7, (Bog woodland) Soaring	JK
BZ0375	06/06/2019	6	Buzzard	1	15:42:00	211			211		GA1, (Improved agricultural grassland) WN7, (Bog woodland) Soaring	JK
BZ0301	10/06/2019	2	Buzzard	1	15:00:51	170		40	130		PB4, (Cutover bog) Upward soaring flight	JH
BZ0300	10/06/2019	2	Buzzard	1	14:28:04	85			85		GA1, (Improved agricultural grassland) Travelling	JH
BZ0297	10/06/2019	2	Buzzard	1	10:17:50	180			180		PB4, (Cutover bog) Soaring	JH
BZ0298	10/06/2019	2	Buzzard	2	14:16:56	98			98		PB4, (Cutover bog) WD4, (Conifer plantation) Soaring	JH
BZ0299	10/06/2019	2	Buzzard	1	14:23:48	173			173		PB4, (Cutover bog) Soaring	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0376	17/06/2019	7	Buzzard	1	13:20:00	68			68		WN7, (Bog woodland) PB4, (Cutover bog) Soaring	JK
BZ0377	17/06/2019	7	Buzzard	1	13:36:00	71			71		WN7, (Bog woodland) PB4, (Cutover bog) Soaring	JK
BZ0379	17/06/2019	7	Buzzard	2	15:55:00	324			324		WN7, (Bog woodland) PB4, (Cutover bog) Soaring	JK
BZ0378	17/06/2019	7	Buzzard	1	15:12:00	53		53			WN7, (Bog woodland) PB4, (Cutover bog) Hunting	JK
BZ0380	25/06/2019	10	Buzzard	1	15:12:00	420			420		PB4, (Cutover bog) Soaring	JK
BZ0381	25/06/2019	10	Buzzard	3	16:11:00	530			530		PB4, (Cutover bog) Soaring	JK
BZ0382	25/06/2019	10	Buzzard	5	16:42:00	712			712		PB4, (Cutover bog) Soaring	JK
BZ0383	25/06/2019	10	Buzzard	2	18:07:00	317			317		PB4, (Cutover bog) Soaring	JK
BZ0384	25/06/2019	10	Buzzard	1	19:12:00	181			181		PB4, (Cutover bog) Soaring	JK
BZ0385	25/06/2019	10	Buzzard	1	19:56:00	129			129		PB4, (Cutover bog) Soaring	JK
BZ0386	26/06/2019	8	Buzzard	1	13:55:00	247			247		WN7, (Bog woodland) PB4, (Cutover bog) Soaring	JK
BZ0387	26/06/2019	8	Buzzard	1	14:11:00	173			173		WN7, (Bog woodland) PB4, (Cutover bog) Soaring	JK
BZ0388	27/06/2019	3	Buzzard	1	18:21:00	412			412		WN7, (Bog woodland) PB4, (Cutover bog) Soaring	JK
BZ0302	02/07/2019	6	Buzzard	1	09:30:08	232			232		PB4, (Cutover bog) WD4, (Conifer plantation) Upward soaring flight	JH
BZ0303	02/07/2019	6	Buzzard	1	12:31:26	240		29	211		PB4, (Cutover bog) GA1, (Improved agricultural grassland) WD4, (Conifer plantation) Soaring	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0304	02/07/2019	6	Buzzard	1	12:51:29	290		60	230		PB4, (Cutover bog) WD4, (Conifer plantation) GA1, (Improved agricultural grassland) Soaring	JH
BZ0305	02/07/2019	6	Buzzard	1	14:03:13	188		40	148		WD4, (Conifer plantation) PB4, (Cutover bog) Hunting	JH
BZ0308	03/07/2019	1	Buzzard	2	12:39:35	68			68		PB4, (Cutover bog) WD4, (Conifer plantation) Travelling	JH
BZ0309	03/07/2019	1	Buzzard	2	14:36:26	354			354		GA1, (Improved agricultural grassland) PB4, (Cutover bog) Soaring upward flight	JH
BZ0307	03/07/2019	1	Buzzard	1	12:30:40	158			158		(Mixed) Conifer woodland GA1, (Improved agricultural grassland) Soaring	JH
BZ0311	03/07/2019	1	Buzzard	1	14:55:16	73			73		PB4, (Cutover bog) WD4, (Conifer plantation) Soaring	JH
BZ0306	03/07/2019	1	Buzzard	1	10:07:36	50		50			GA1, (Improved agricultural grassland) WD4, (Conifer plantation) Landing in WD4	JH
BZ0310	03/07/2019	1	Buzzard	2	14:42:36	94		40	54		PB4, (Cutover bog) WD4, (Conifer plantation) Landing in WD4	JH
BZ0312	08/07/2019	5	Buzzard	1	11:09:40	45		45			GA1, (Improved agricultural grassland) Landing in scrub	JH
BZ0313	08/07/2019	5	Buzzard	1	11:29:00	38		38			PB4, (Cutover bog) Landing in scrub	JH
BZ0314	10/07/2019	9	Buzzard	1	11:48:56	205			205		PB4, (Cutover bog) Soaring	JH
BZ0316	10/07/2019	9	Buzzard	1	13:16:51	155			155		GA1, (Improved agricultural grassland) Soaring	JH
BZ0315	10/07/2019	9	Buzzard	1	11:55:20	100		40	60		PB4, (Cutover bog) WD4, (Conifer plantation) Landing in WD4	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0317	12/07/2019	3	Buzzard	1	10:27:24	109			109		GA1, (Improved agricultural grassland) PB4, (Cutover bog) Soaring	JH
BZ0319	16/07/2019	8	Buzzard	1	16:09:49	170			170		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Soaring	JH
BZ0318	16/07/2019	8	Buzzard	1	14:27:21	56		56			PB4, (Cutover bog) Landing in cover	JH
BZ0324	18/07/2019	7	Buzzard	1	12:48:16	122		40	82		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling and being mobbed by Kestrel.	JH
BZ0320	18/07/2019	7	Buzzard	1	09:09:30	146			146		GA1, (Improved agricultural grassland) Soaring	JH
BZ0323	18/07/2019	7	Buzzard	2	11:32:22	346		20	326		PB4, (Cutover bog) Soaring	JH
BZ0326	18/07/2019	7	Buzzard	1	14:33:11	264		100	164		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Soaring	JH
BZ0321	18/07/2019	7	Buzzard	1	10:21:46	110			110		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Soaring	JH
BZ0322	18/07/2019	7	Buzzard	1	10:40:39	108		108			PB4, (Cutover bog) Hunting and landing in cover	JH
BZ0325	18/07/2019	7	Buzzard	1	14:12:50	165		165			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Being mobbed by K	JH
BZ0327	24/07/2019	3	Buzzard	1	09:46:12	35			35		GA1, (Improved agricultural grassland) Travelling	JH
BZ0328	24/07/2019	3	Buzzard	1	13:34:03	118			118		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Soaring	JH
BZ0330	24/07/2019	3	Buzzard	1	15:48:35	189		50	139		PB4, (Cutover bog) Soaring	JH
BZ0329	24/07/2019	3	Buzzard	1	13:52:57	58		58			PB4, (Cutover bog) Landing on PB4	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0390	30/07/2019	10	Buzzard	1	16:53:00	72		72			PB4, (Cutover bog) WN7, (Bog woodland) Travelling	JK
BZ0389	30/07/2019	10	Buzzard	2	15:09:00	322			322		PB4, (Cutover bog) WN7, (Bog woodland) Soaring	JK
BZ0333	01/08/2019	1	Buzzard	1	14:12:54	40		0	40		PB4, (Cutover bog) travelling	TR
BZ0332	01/08/2019	1	Buzzard	1	14:05:40	20		20			descending	TR
BZ0334	01/08/2019	1	Buzzard	1	14:18:18	280			280		circling	TR
BZ0331	01/08/2019	1	Buzzard	2	13:42:09	140		10	130		PB2, (Upland blanket bog)	TR
BZ0335	01/08/2019	2	Buzzard	1	15:50:04	250			250		PB4, (Cutover bog) circling	TR
BZ0344	02/08/2019	5	Buzzard	1	10:53:32	40		40			PB4, (Cutover bog) Landing in scrub.	JH
BZ0345	02/08/2019	6	Buzzard	1	12:53:51	174		20	154		GA1, (Improved agricultural grassland) Soaring	JH
BZ0346	05/08/2019	6	Buzzard	1	19:55:39	56		56			GA1, (Improved agricultural grassland) WD4, (Conifer plantation) Landing in hedgerow	JH
BZ0337	06/08/2019	4	Buzzard	1	17:39:54	35			35		GA1, (Improved agricultural grassland) gliding on wind	TR
BZ0336	06/08/2019	4	Buzzard	1	16:28:54	45		25	20		WD4, (Conifer plantation)	TR
BZ0338	07/08/2019	3	Buzzard	2	16:03:39	95		25	30		PB4, (Cutover bog) circling area	TR
BZ0340	07/08/2019	3	Buzzard	2	16:42:37	330		50	280		PB4, (Cutover bog) circling and interacting in flight	TR
BZ0339	07/08/2019	3	Buzzard	2	16:12:11	130		30	100		PB4, (Cutover bog) circling	TR
BZ0342	29/08/2019	4	Buzzard	1	19:06:50	25		25			GA1, (Improved agricultural grassland) travelling	TR
BZ0343	29/08/2019	4	Buzzard	2	19:37:55	40		10	10		PB4, (Cutover bog) gliding on wind	TR



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BZ0341	29/08/2019	4	Buzzard	1	18:59:01	25		25			circling	TR
BZ0347	04/09/2019	6	Buzzard	1	10:24:26	122			122		GA1, (Improved agricultural grassland) PB4, (Cutover bog) Soaring	JH
BZ0348	10/09/2019	4	Buzzard	1	10:45:22	228			228		PB4, (Cutover bog) Soaring flight	JH
BZ0352	11/09/2019	1	Buzzard	1	12:03:43	55		55			PB4, (Cutover bog) hunting	TR
BZ0350	13/09/2019	8	Buzzard	2	12:22:37	434			434		PB4, (Cutover bog) WD4, (Conifer plantation) Soaring	JH
BZ0349	13/09/2019	8	Buzzard	3	11:51:09	64		10	54		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Landing on telegraph pole	JH
BZ0354	13/09/2019	3	Buzzard	4	11:48:13	780			550		(Mixed) broadleaved woodland spiralling	TR
BZ0353	13/09/2019	3	Buzzard	8	11:20:57	690		30	180		high circling	TR
BZ0355	13/09/2019	3	Buzzard	3	12:00:35	420			420		PB4, (Cutover bog) circling	TR
BZ0356	13/09/2019	3	Buzzard	3	12:11:58	350			250		PB4, (Cutover bog) circling	TR
BZ0351	17/09/2019	10	Buzzard	1	12:03:24	68		68			PB4, (Cutover bog) Landing in scrub	JH

Vantage Point Survey – Non-Flight Observations							
Map Ref. No.	Date	VP	Species	No. of Birds	Time	Comments	Surveyor
	23/10/2017	5	Buzzard	1	10:57:00	Perched off site to the N.	SON
	15/11/2017	5	Buzzard	1	09:27:00	Perched just S of VP	SON
	06/12/2017	9	Buzzard	1	08:04:00	Perched in tree	SON



Vantage Point Survey – Non-Flight Observations							
Map Ref. No.	Date	VP	Species	No. of Birds	Time	Comments	Surveyor
N/A	08/01/2018	7	Buzzard	1	09:33:00	Heard calling off site to the S S/E	SON
	10/01/2018	5	Buzzard	1	10:10:00	Perched half way between VP and site. Flew in from north over the site.	SON
	05/02/2018	6	Buzzard	1	17:44:00	Perched off site N of east Drinagh.	SON
N/A	09/02/2018	5	Buzzard	1	08:24:00	Calling off site to the north of conifer plantation.	SON
N/A	26/02/2018	9	Buzzard	1	07:05:00	Calling from tree	BM
	23/03/2018	9	Buzzard	1	09:01:00	Perched in tree	SON
	24/03/2018	5	Buzzard	1	11:58:00	Perched above wetlands in SE. May have been reason for MA to be flushed.	SON
N/A	05/09/2018	5	Buzzard	1	06:40:00	Perched on Telegraph Pole Offsite	JH
2003	17/10/2018	9	Buzzard	4	17:50:00	GA1, (Improved agricultural grassland) perched and travelling. Family party, juveniles present	TR
N/A	12/02/2019	3	Buzzard	1		Perched in Scrub - Onsite	JH
N/A	12/02/2019	3	Buzzard	2		Perched in Scrub - Onsite	JH
N/A	02/08/2019	5	Buzzard	1		Perched in treeline at Stonestown	JH
	11/09/2019	1	Buzzard	1	06:25:00	WD4, (Conifer plantation) Calling W of VP1	TR

Breeding Bird Survey							
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity	Comments	Surveyor
BZ001	10/04/2018		Buzzard	1	PB4, (Cutover bog) Travelling	Flying in an easterly direction	JH
BZ002	10/04/2018		Buzzard	1	WD4, (Conifer plantation) GA1, (Improved agricultural grassland) Travelling	Flying in a NE direction	JH
BZ003	12/04/2018		Buzzard	1	WD4, (Conifer plantation) GA1, (Improved agricultural grassland) Travelling	Flying in westerly direction	JH



Breeding Bird Survey							
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity	Comments	Surveyor
BZ004	16/04/2018		Buzzard	1	WD4, (Conifer plantation) PB4, (Cutover bog) Hunting and spiralling on wind		JH
BZ005	20/04/2018		Buzzard	1	GA1, (Improved agricultural grassland) PB4, (Cutover bog) Soaring	Soaring in height band 3 - onsite for 68 seconds	JH
BZ006	20/04/2018		Buzzard	1	GA1, (Improved agricultural grassland) PB4, (Cutover bog) Perched in treeline		JH
BZ007	20/04/2018		Buzzard	2	GA1, (Improved agricultural grassland) WD4, (Conifer plantation) Soaring	In height band 2 for 68 seconds (offsite).	JH
BZ008	20/04/2018		Buzzard	1	GA1, (Improved agricultural grassland) Soaring		JH
BZ009	20/04/2018		Buzzard	1	GA1, (Improved agricultural grassland) WD4, (Conifer plantation) Soaring		JH
BZ010	02/05/2018		Buzzard	1	PB4, (Cutover bog) Soaring	In height band 3 for 206 seconds	JH
BZ011	02/05/2018		Buzzard	1	PB4, (Cutover bog) WD4, (Conifer plantation) Soaring	Travelling and soaring in height band 3 for 86 seconds - heading in an easterly direction	JH
BZ012	02/05/2018		Buzzard	1	PB4, (Cutover bog) GA1, (Improved agricultural grassland) Soaring	In height band 3 for 44 seconds - heading westerly in direction	JH
BZ013	24/05/2018		Buzzard	1	GA1, (Improved agricultural grassland) Landing in GA1		JH
BZ014	24/05/2018		Buzzard	1	PB4, (Cutover bog) WD4, (Conifer plantation) Soaring and Calling	Carrying prey item and landing in WD4	JH
BZ015	07/06/2018	09:42:00	Buzzard	2	Flying and calling		JH
BZ016	08/06/2018	05:43:00	Buzzard	1	Travelling		JH
BZ017	13/06/2018	09:53:00	Buzzard	1	Travelling		JH
BZ018	13/06/2018	10:32:00	Buzzard	1	Hunting and flying on		JH
BZ019	13/06/2018	10:48:00	Buzzard	1	Flying and calling		JH



Breeding Bird Survey							
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity	Comments	Surveyor
BZ020	19/06/2018	09:59:00	Buzzard	1	Soaring		JH
BZ021	21/06/2018	05:15:00	Buzzard	1	Flushed by observer from freshly killed rabbit. Flew away		JH
BZ022	21/06/2018	09:21:00	Buzzard	1	Soaring		JH
BZ023	05/04/2019	11:46:03	Buzzard	1	PB4, (Cutover bog) Soaring and mewing		JH
BZ024	05/04/2019	11:48:40	Buzzard	2	PB4, (Cutover bog) WD4, (Conifer plantation) Soaring		JH
BZ025	09/04/2019	12:32:08	Buzzard	1	GA1, (Improved agricultural grassland) Travelling		JH
BZ026	10/04/2019	11:42:24	Buzzard	1	PB1, (Raised bog) PB4, (Cutover bog) GA1, (Improved agricultural grassland) Soaring		JH
BZ027	03/05/2019	11:22:05	Buzzard	1	GA1, (Improved agricultural grassland) PB4, (Cutover bog)		JH
BZ028	13/05/2019	10:20:51	Buzzard	1	PB4, (Cutover bog)		JH
BZ029	14/05/2019	08:37:48	Buzzard	1	PB4, (Cutover bog)		JH
BZ030	15/05/2019	07:22:43	Buzzard	1	PB4, (Cutover bog) WD4, (Conifer plantation)		JH
BZ031	17/05/2019	12:38:47	Buzzard	1	PB4, (Cutover bog) GA1, (Improved agricultural grassland)		JH
BZ032	17/05/2019	13:33:58	Buzzard	1	PB4, (Cutover bog) WD4, (Conifer plantation)		JH
BZ033	20/05/2019	14:42:09	Buzzard	1	WD4, (Conifer plantation) Old nest in Scots Pinetree-Possible nesting location		JH
BZ034	07/06/2019	13:39:52	Buzzard	1	PB4, (Cutover bog) GA1, (Improved agricultural grassland) Soaring		JH
BZ035	11/06/2019	09:56:22	Buzzard	1	PB4, (Cutover bog) Soaring		JH
BZ036	20/06/2019	07:22:55	Buzzard	1	PB4, (Cutover bog) Perched in treeline		JH
BZ037	09/07/2019	12:38:59	Buzzard	1	PB4, (Cutover bog) GA1, (Improved agricultural grassland)		JH



Breeding Bird Survey							
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity	Comments	Surveyor
BZ038	11/07/2019	10:01:34	Buzzard	1	PB4, (Cutover bog)		JH
BZ039	11/07/2019	10:32:08	Buzzard	1	GA1, (Improved agricultural grassland)		JH
BZ040	11/07/2019	14:02:44	Buzzard	1	PB4, (Cutover bog) In band 2		JH
BZ041	15/07/2019	11:22:23	Buzzard	1	PB4, (Cutover bog) WD4, (Conifer plantation)		JH
BZ042	23/07/2019	09:42:16	Buzzard	1	PB4, (Cutover bog)		JH
BZ043	23/07/2019	12:25:22	Buzzard	1	PB4, (Cutover bog)		JH
BZ044	23/07/2019	14:39:03	Buzzard	1	PB1, (Raised bog) Mixed broadleaved/conifer woodland		JH

Breeding Raptor Survey							
Map Ref.	Date	Species	No. of Birds	Time of flight	Duration of flight (s)	Notes on habitat and activity	Surveyor
BZ001	03/04/2018	Buzzard	1	15:04:00		Flight south in area of Cush as per map	JH
BZ002	04/04/2018	Buzzard	2	14:38:00		hunting and gliding	JH
BZ003	04/04/2018	Buzzard	1	15:28:00		perched on hedgerow	JH
BZ004	05/04/2018	Buzzard	1	10:22:00		Hunting and gliding	JH
BZ005	05/04/2018	Buzzard	1	10:36:00		hunting and gliding	JH
BZ006	05/04/2018	Buzzard	1	11:48:00		hunting and gliding on wind	JH
BZ007	05/04/2018	Buzzard	1	11:54:00		travelling	JH
BZ008	05/04/2018	Buzzard	1	12:02:00		hunting and gliding	JH
BZ009	05/04/2018	Buzzard	1	12:08:00		mobbed by HC	JH
BZ010	05/04/2018	Buzzard	1	12:32:00		Spiralling on wind	JH
BZ011	09/05/2018	Buzzard	1			Travelling	JH



Breeding Raptor Survey							
Map Ref.	Date	Species	No. of Birds	Time of flight	Duration of flight (s)	Notes on habitat and activity	Surveyor
BZ012	16/05/2018	Buzzard	2	10:02:00		Spiralling on wind	JH
BZ013	16/05/2018	Buzzard	1	10:15:00		WD4, (Conifer plantation) Travelling	JH
BZ014	16/05/2018	Buzzard	1	10:23:00		Spiralling/travelling	JH
BZ015	16/05/2018	Buzzard	1	10:40:00		WD4, (Conifer plantation) Flying	JH
BZ016	16/05/2018	Buzzard	1	11:03:00		spiralling	JH
BZ017	16/05/2018	Buzzard	1	11:06:00		Travelling	JH
BZ018	16/05/2018	Buzzard	1	11:40:00		spiralling	JH
BZ019	16/05/2018	Buzzard	1	11:45:00		being mobbed by HC.	JH
BZ020	16/05/2018	Buzzard	1	12:40:00		travelling	JH
BZ021	16/05/2018	Buzzard	1	12:58:00		Travelling	JH
N/A	26/06/2018	Buzzard	1	10:37:00		PB4, (Cutover bog) GA1, (Improved agricultural grassland) perched in tree	PTroake
N/A	26/06/2018	Buzzard	1	10:51:00		G, (Grassland and marsh) 1051 to 1127	PTroake
BZ022	26/06/2018	Buzzard	1	11:27:00	360	WS, (Scrub/ transitional woodland) flew up, circled then drifted south	PTroake
BZ023	26/06/2018	Buzzard	1	11:57:00	80	GA1, (Improved agricultural grassland) sky dancing	PTroake
BZ024	26/06/2018	Buzzard	1	11:58:00	480	GA1, (Improved agricultural grassland) circling	PTroake
BZ025	26/06/2018	Buzzard	1	12:35:00	120	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) GA1, (Improved agricultural grassland) circling, dropped	PTroake
BZ026	26/06/2018	Buzzard	1	13:34:00	75	Circling	PTroake
BZ027	26/06/2018	Buzzard	1	17:44:00	45	GA1, (Improved agricultural grassland)	PTroake
BZ028	27/06/2018	Buzzard	1	05:53:00	60	GA1, (Improved agricultural grassland) W, (Woodland and scrub) Disturbed from roadside trees, flew NW then west	PTroake
N/A	27/06/2018	Buzzard	1	06:01:00		GA1, (Improved agricultural grassland) perched on pylon, calling	PTroake



Breeding Raptor Survey							
Map Ref.	Date	Species	No. of Birds	Time of flight	Duration of flight (s)	Notes on habitat and activity	Surveyor
BZ029	27/06/2018	Buzzard	1	09:50:00	190	WD4, (Conifer plantation) circling, drifted, stooped down at end of flight	PTroake
N/A	27/06/2018	Buzzard	1	10:47:00		PB4, (Cutover bog) perched in pine, calling repeatedly when I stopped walking, then flew down out of view after c.2 minutes	PTroake
BZ030	09/07/2018	Buzzard	1	13:02:00	105	W, (Woodland and scrub) GA1, (Improved agricultural grassland) circling, hunting	P Troake
BZ031	09/07/2018	Buzzard	1	13:10:00	100	GA1, (Improved agricultural grassland) female, with prey, circled up then plunged to top of tall beech along avenue.	P Troake
BZ032	09/07/2018	Buzzard	1	13:10:00	85	GA1, (Improved agricultural grassland) male?; followed female to top of beech	P Troake
BZ033	09/07/2018	Buzzard	1	13:16:00	50	GA1, (Improved agricultural grassland) hunting, dropped	P Troake
BZ034	09/07/2018	Buzzard	1	13:18:00	70	GA1, (Improved agricultural grassland) circling, dropped behind trees	P Troake
BZ035	09/07/2018	Buzzard	1	13:36:00	100	W, (Woodland and scrub) GA1, (Improved agricultural grassland) hunting; male?	P Troake
BZ036	09/07/2018	Buzzard	1	13:38:00	360	W, (Woodland and scrub) GA1, (Improved agricultural grassland) calling overhead initially, circling	P Troake
BZ037	09/07/2018	Buzzard	1	13:44:00	600	GA1, (Improved agricultural grassland) beyond buffer?; with prey, circled up, sky danced when second bird appeared lower down then dropped prey from up high	P Troake
BZ038	09/07/2018	Buzzard	1	13:57:00	30	W, (Woodland and scrub) GA1, (Improved agricultural grassland) circling	P Troake
BZ039	09/07/2018	Buzzard	1	15:27:00	360	WN7, (Bog woodland) PB, (Bogs) GA1, (Improved agricultural grassland) calling repeatedly, initially in young birch wood, circled up then sky danced down low	P Troake
BZ040	09/07/2018	Buzzard	1	16:21:00	105	GA1, (Improved agricultural grassland) circling	P Troake



Breeding Raptor Survey							
Map Ref.	Date	Species	No. of Birds	Time of flight	Duration of flight (s)	Notes on habitat and activity	Surveyor
BZ041	09/07/2018	Buzzard	1	17:47:00	50	GA1, (Improved agricultural grassland) Mixed broadleaved/conifer woodland glided over field, landed in ash tree on forest edge	P Troake
BZ042	10/07/2018	Buzzard	1	09:16:00	110	GA1, (Improved agricultural grassland)	P Troake
BZ043	02/04/2019	Buzzard	1	11:39:16		WD4, (Conifer plantation) Being mobbed by HC	JH
BZ044	02/04/2019	Buzzard	1	12:05:00		WD4, (Conifer plantation)	JH
BZ045	02/04/2019	Buzzard	1	14:16:08		WD4, (Conifer plantation)	JH
BZ046	25/04/2019	Buzzard	2	12:02:28		PB4, (Cutover bog)	JH
BZ047	25/04/2019	Buzzard	2	14:52:08		GA1, (Improved agricultural grassland)	JH
BZ048	02/05/2019	Buzzard	2	10:44:00	281	PB4, (Cutover bog) WN7, (Bog woodland) Soaring	JK
BZ049	02/05/2019	Buzzard	1	12:26:00	470	PB4, (Cutover bog) WN7, (Bog woodland) Soaring	JK
BZ050	02/05/2019	Buzzard	1	13:16:00	52	PB4, (Cutover bog) WN7, (Bog woodland) Travelling	JK
BZ051	30/05/2019	Buzzard	3	14:25:00	305	PB4, (Cutover bog) WN7, (Bog woodland)	JK
BZ052	30/05/2019	Buzzard	1	16:20:00	280	WN7, (Bog woodland)	JK
BZ053	05/06/2019	Buzzard	1	10:05:18		WD4, (Conifer plantation) Soaring	JH
BZ054	05/06/2019	Buzzard	1	12:40:02		WD4, (Conifer plantation) PB4, (Cutover bog) Soaring in band 3	JH
BZ055	17/06/2019	Buzzard	1	10:16:47		GA1, (Improved agricultural grassland) Hunting	JH
BZ056	17/06/2019	Buzzard	1	12:42:35		GA1, (Improved agricultural grassland) Perched on telegraph pole and hunting along hedgerow	JH
BZ057	17/06/2019	Buzzard	1	13:20:28		WD4, (Conifer plantation) Flying and calling	JH
BZ058	17/06/2019	Buzzard	1	16:11:26		WD4, (Conifer plantation) Travelling	JH
BZ059	04/07/2019	Buzzard	1	10:10		WD4, (Conifer plantation) Soaring	JH
BZ060	04/07/2019	Buzzard	1	12:00		WD4, (Conifer plantation) Soaring	JH



Breeding Raptor Survey							
Map Ref.	Date	Species	No. of Birds	Time of flight	Duration of flight (s)	Notes on habitat and activity	Surveyor
BZ061	04/07/2019	Buzzard	1	13:00		GA1, (Improved agricultural grassland) WD4, (Conifer plantation) Travelling	JH
BZ062	04/07/2019	Buzzard	1	14:35		WD4, (Conifer plantation) GA1, (Improved agricultural grassland) Landing in WD4	JH
BZ063	26/07/2019	Buzzard	1	10:02:17		GA1, (Improved agricultural grassland) Soaring	JH
BZ064	26/07/2019	Buzzard	1	14:19:50		GA1, (Improved agricultural grassland) Perched on telegraph pole and flying off	JH

Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
BZ001	18/09/2018		Buzzard	2		Flying over site, 100m high	JK
BZ002	03/10/2018	10:49:00	Buzzard	1		Travelling	JH
BZ003	03/10/2018	12:15:00	Buzzard	3		Soaring	JH
BZ004	05/10/2018	12:01:00	Buzzard	1		Hunting and calling offsite	JH
BZ005	15/10/2018	11:04:00	Buzzard	1		Landing on PB4	JH
BZ006	15/10/2018	12:44:00	Buzzard	1		Soaring	JH
BZ007	22/10/2018	12:30:00	Buzzard	2		soaring	JH
BZ008	22/10/2018	12:55:00	Buzzard	1		soaring	JH
BZ009	05/12/2018	13:38:00	Buzzard	1		Perched in hedgerow	JH
BZ010	17/12/2018	13:54:00	Buzzard	1		WD4, (Conifer plantation) Soaring/gliding on wind	JH
BZ011	17/12/2018	14:00:00	Buzzard	1		PB4, (Cutover bog) Hunting	JH
BZ012	09/01/2019	11:47:00	Buzzard	1		Travelling overhead	JH
N/A	17/01/2019	10:55:00	Buzzard	1		Perched in hedgerow	JH

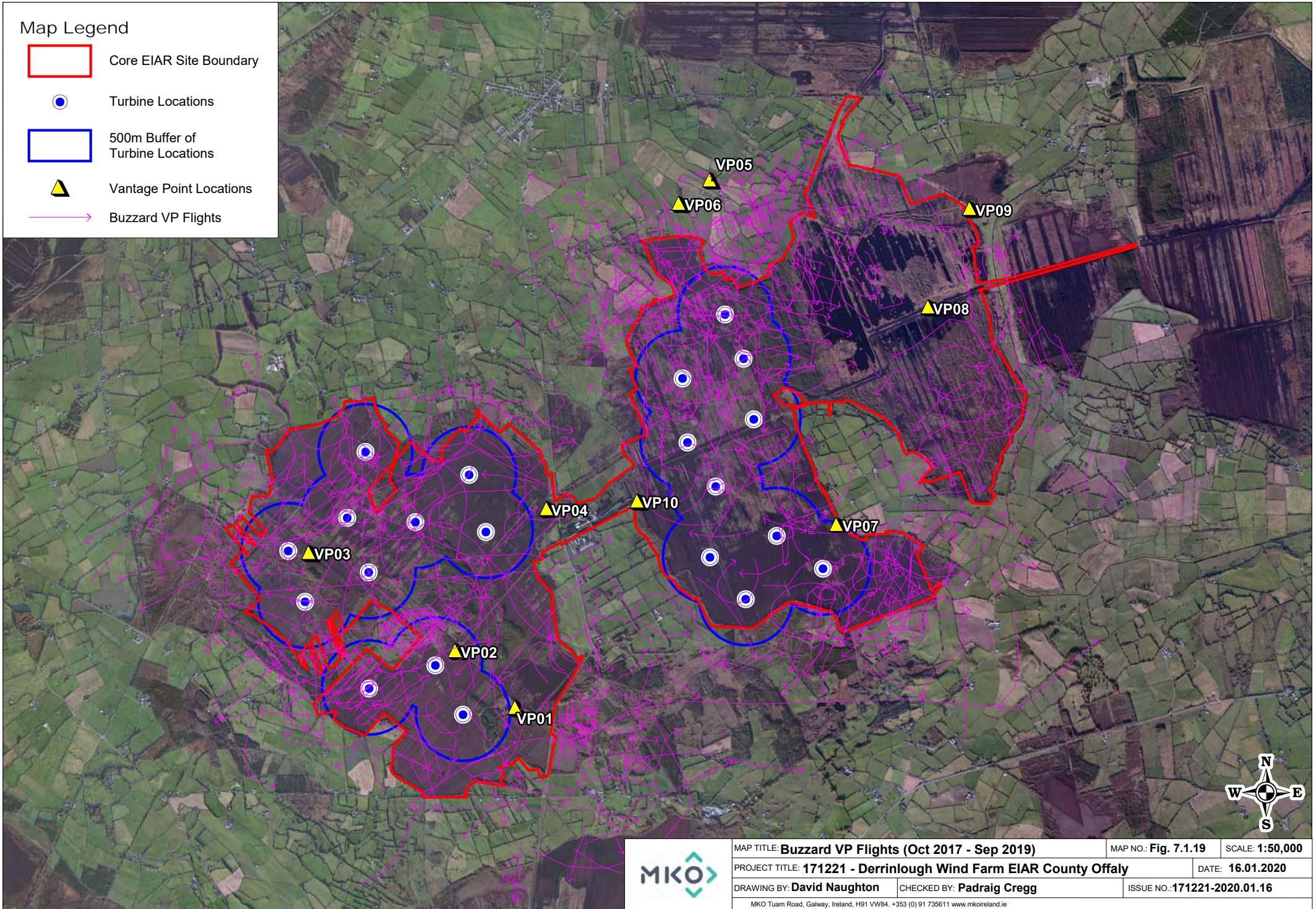


Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
BZ013	28/01/2019		Buzzard	1			JH
BZ014	04/02/2019	13:26:00	Buzzard	1		Calling and carrying nesting material in flight	JH
BZ015	06/02/2019	12:52:00	Buzzard	2		PB4, (Cutover bog) WS1, (Scrub) Flying and landing in scrub	JH
BZ016	06/02/2019	14:45:00	Buzzard	1		Soaring flight	JH
BZ017	06/02/2019		Buzzard	1			JH
BZ018	11/02/2019	12:44:00	Buzzard	1		PB4, (Cutover bog) WD4, (Conifer plantation) Travelling in flight	JH
BZ019	15/02/2019	10:22:00	Buzzard	1		Travelling in flight	JH
BZ020	25/02/2019		Buzzard	1			JH
BZ021	25/02/2019		Buzzard	2			JH
BZ022	25/02/2019		Buzzard	1			JH
BZ023	05/03/2019	11:02:00	Buzzard	1		PB4, (Cutover bog) WS1, (Scrub) Travelling overhead	JH
BZ024	13/03/2019	09:33:00	Buzzard	1		Travelling overhead	JH
BZ025	28/03/2019		Buzzard	1			JH
BZ026	28/03/2019		Buzzard	1		Noggus Bog	JH

Incidental Observations						
Date	Survey Type	Location	Species	No. of Birds	Notes	Surveyor
24/09/2019	Wildfowl Counts	Stonestown	Buzzard	2	Travelling North-easterly in height band 2	JH
21/09/2018	Commuting/ Migratory VP	CMVP3	Buzzard	1	BZ Landing and Perching on Fence Post	JH

Map Legend

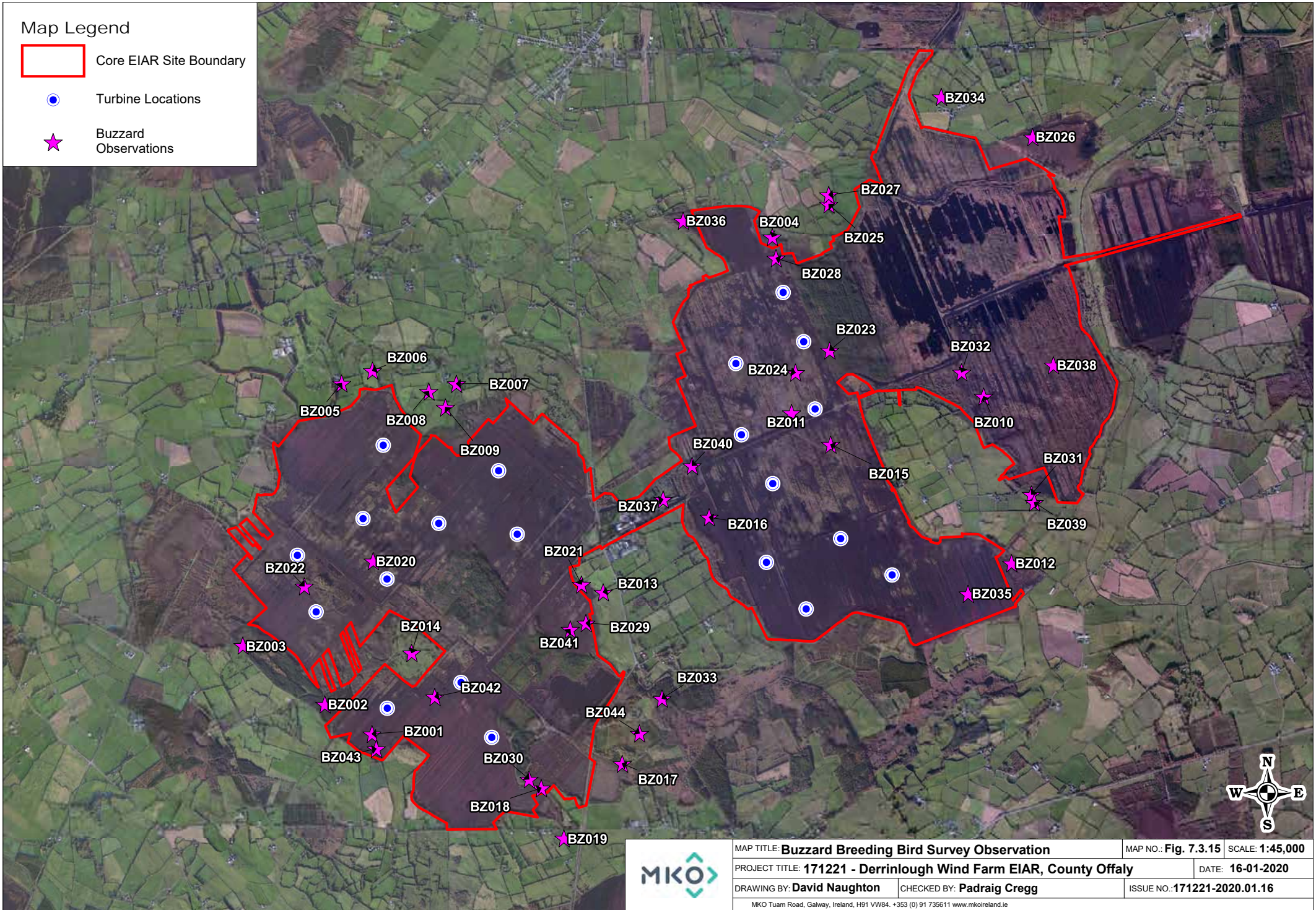
- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ Vantage Point Locations
- Buzzard VP Flights



	MAP TITLE: Buzzard VP Flights (Oct 2017 - Sep 2019)	MAP NO.: Fig. 7.1.19	SCALE: 1:50,000	
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR County Offaly		DATE: 16.01.2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16	
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie			







Map Legend

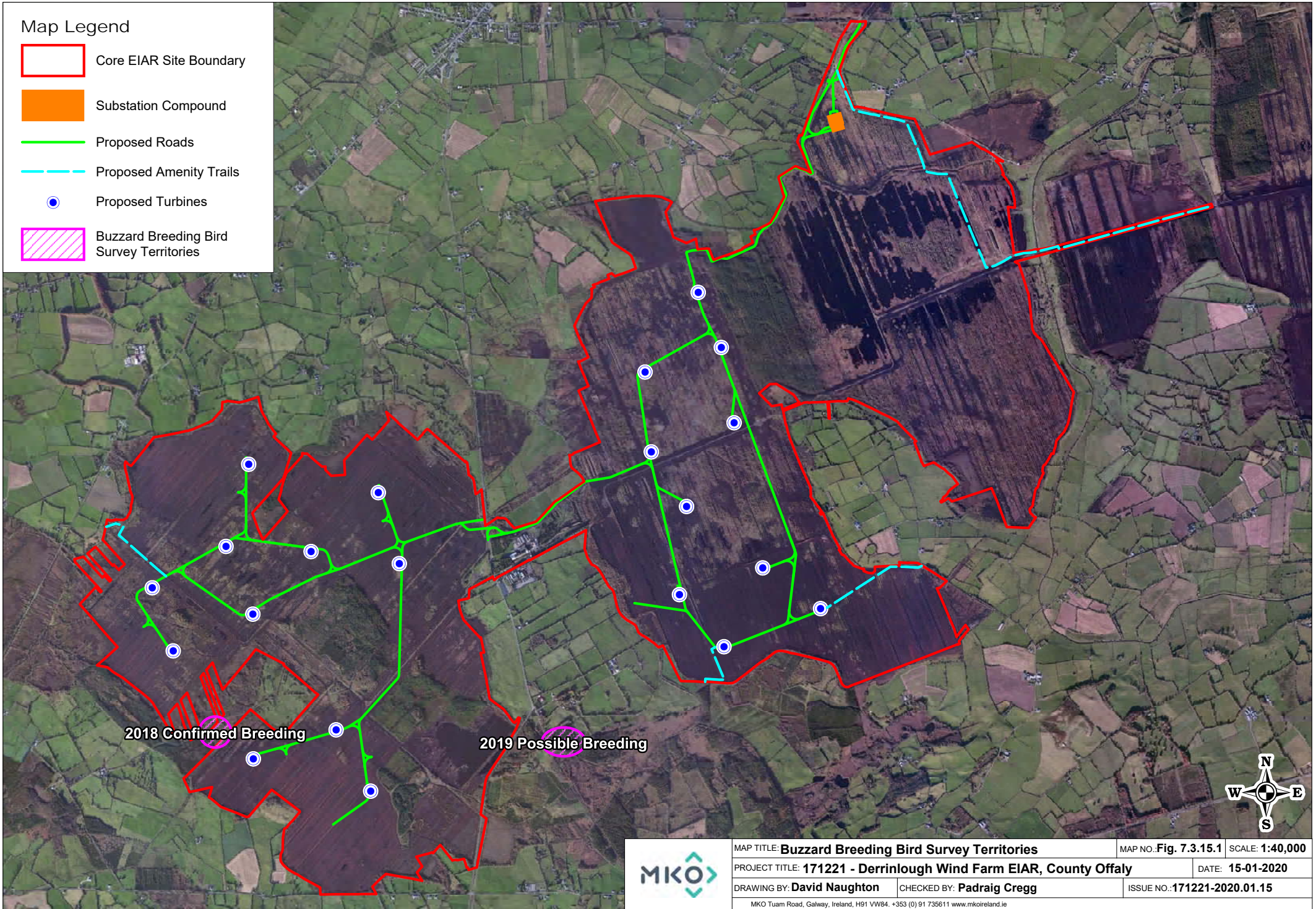
- Core EIAR Site Boundary
- Turbine Locations
- ★ Buzzard Observations



	MAP TITLE: Buzzard Breeding Bird Survey Observation	MAP NO.: Fig. 7.3.15	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly		DATE: 16-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16	
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie			

Map Legend

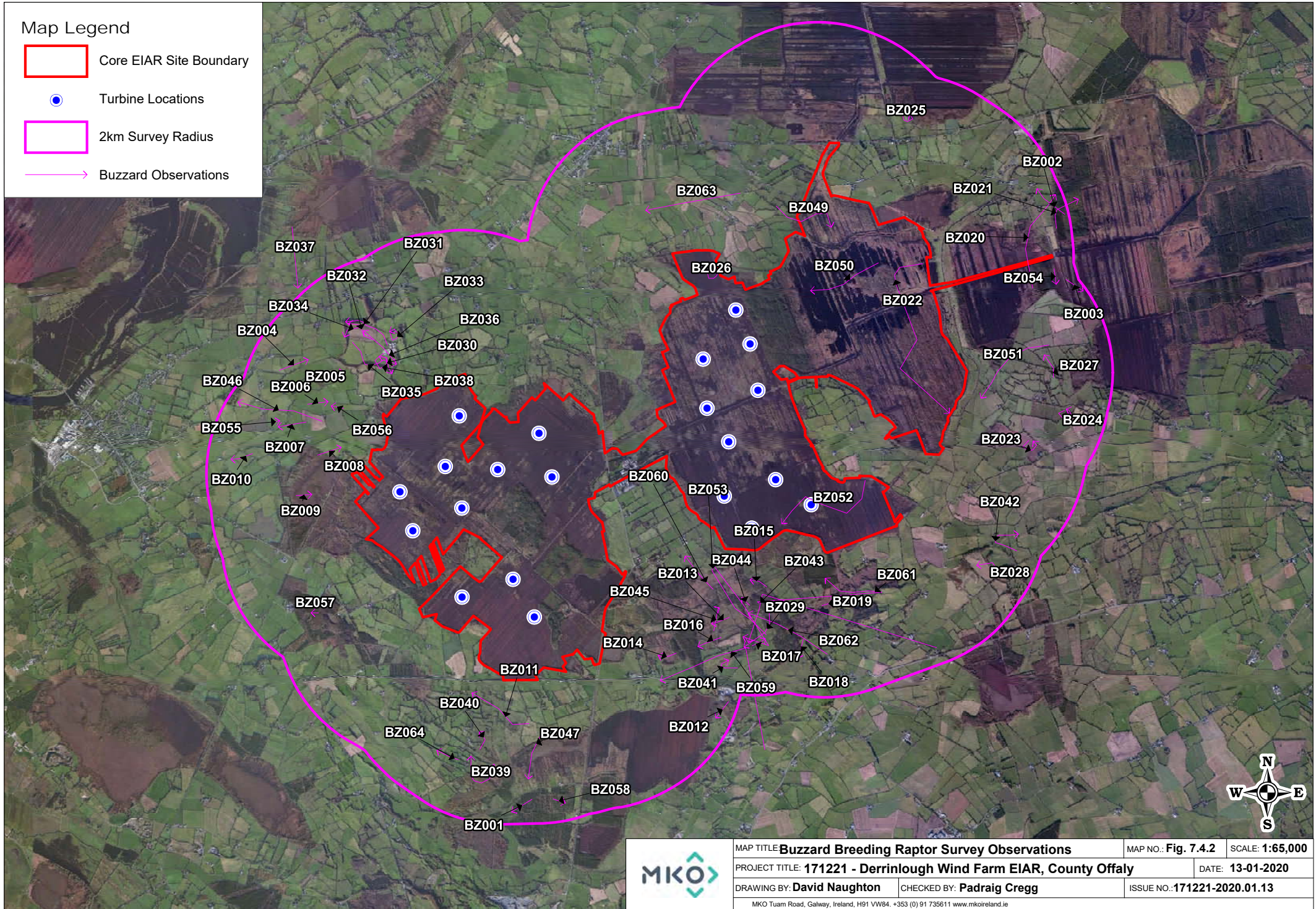
-  Core EIAR Site Boundary
-  Substation Compound
-  Proposed Roads
-  Proposed Amenity Trails
-  Proposed Turbines
-  Buzzard Breeding Bird Survey Territories



	MAP TITLE: Buzzard Breeding Bird Survey Territories	MAP NO.: Fig. 7.3.15.1	SCALE: 1:40,000
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly	DATE: 15-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.15
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Map Legend

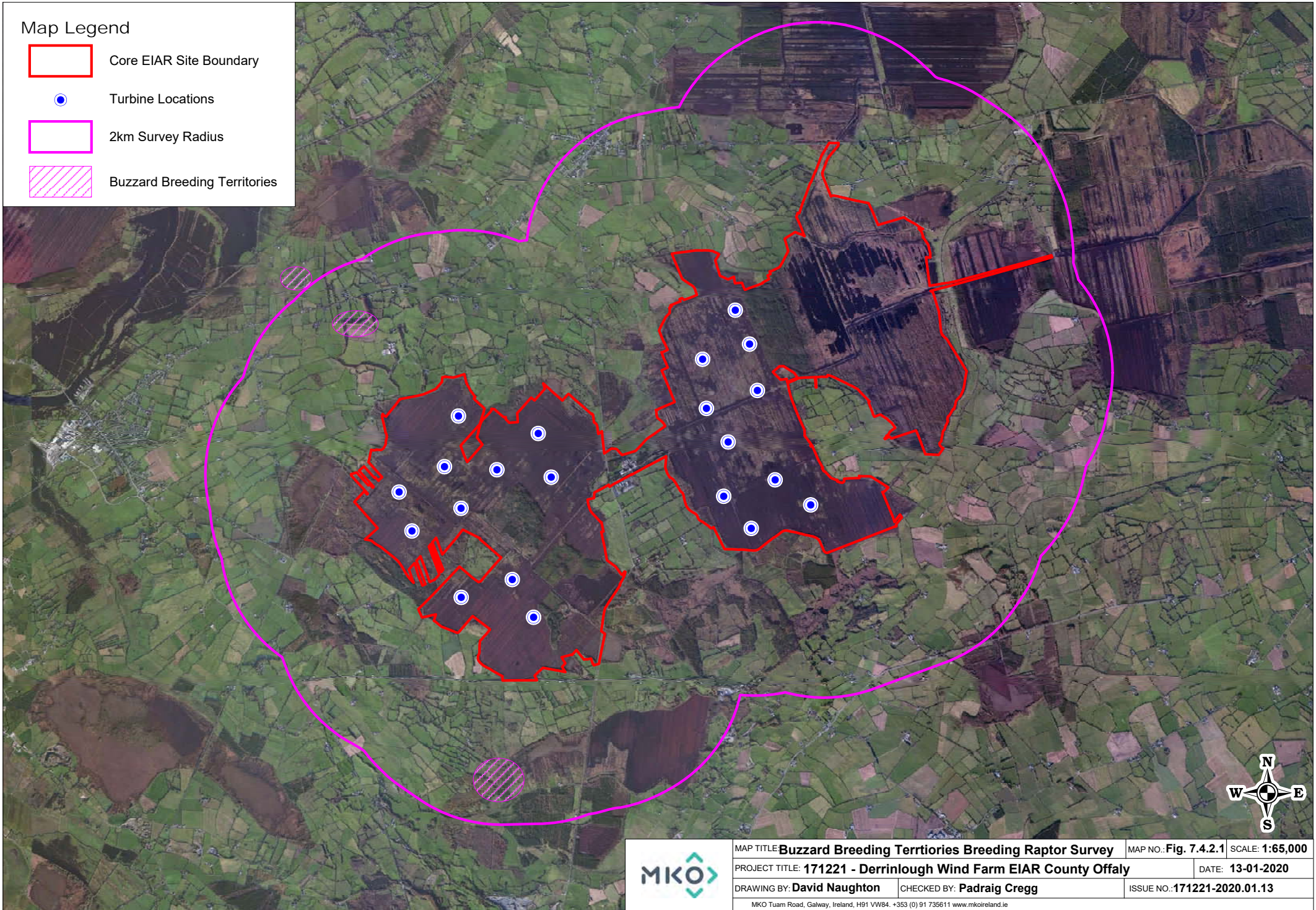
- Core EIAR Site Boundary
- Turbine Locations
- 2km Survey Radius
- Buzzard Observations



	MAP TITLE: Buzzard Breeding Raptor Survey Observations		MAP NO.: Fig. 7.4.2	SCALE: 1:65,000	
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly			DATE: 13-01-2020	
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.13	
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie				

Map Legend

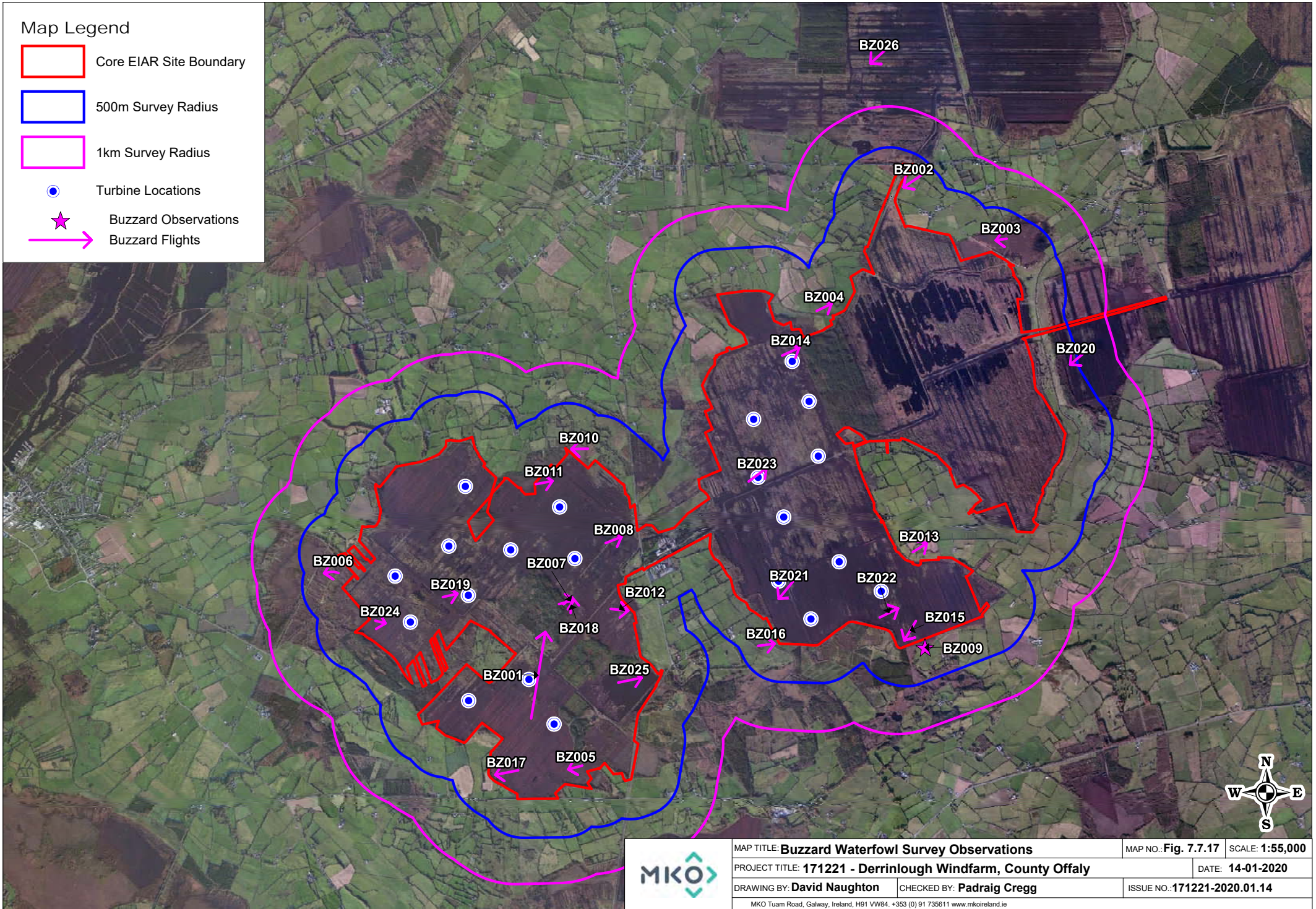
-  Core EIAR Site Boundary
-  Turbine Locations
-  2km Survey Radius
-  Buzzard Breeding Territories



MAP TITLE: Buzzard Breeding Territories Breeding Raptor Survey	MAP NO.: Fig. 7.4.2.1	SCALE: 1:65,000
PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR County Offaly	DATE: 13-01-2020	
DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.13
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Map Legend

- Core EIAR Site Boundary
- 500m Survey Radius
- 1km Survey Radius
- Turbine Locations
- ★ Buzzard Observations
- Buzzard Flights



	MAP TITLE: Buzzard Waterfowl Survey Observations		MAP NO.: Fig. 7.7.17	SCALE: 1:55,000	
	PROJECT TITLE: 171221 - Derrinlough Windfarm, County Offaly			DATE: 14-01-2020	
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.14
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie				



Table 22 Sparrowhawk Survey Data

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
SH0041	06/10/2017	1	Sparrowhawk	1	10:54:00	30	15	15			Hunting edge of lake	BM
SH0042	06/10/2017	4	Sparrowhawk	1	16:01:00	20	10	10			Hunting	BM
SH0043	20/10/2017	9	Sparrowhawk	1	09:12:00	20	10	10			Hunting through scrub	BM
SH0044	26/11/2017	3	Sparrowhawk	1	13:03:00	30	15	15			Hunting male	BM
SH0045	12/12/2017	7	Sparrowhawk	1	10:04:00	20	10	10			Flying S-N hunting as it went.	SON
SH0046	08/01/2018	6	Sparrowhawk	1	13:23:00	10	5	5			Flying from W-E over open bog.	SON
SH0047	15/01/2018	2	Sparrowhawk	1	14:06:00	20	10	10			Hunting	BM
SH0048	22/01/2018	4	Sparrowhawk	1	10:01:00	30	15	15			Flying	BM
SH0049	23/01/2018	10	Sparrowhawk	1	10:56:00	10					Hunting	SON
SH0050	26/01/2018	3	Sparrowhawk	2	10:01:00	90			90		Early display	JA
SH0051	02/02/2018	6	Sparrowhawk	1	09:25:00	40			40		Flew from conifer plantation W/NW.	SON
SH0052	14/02/2018	3	Sparrowhawk	1	08:35:00	20	10	10			Hunting	BM
SH0053	14/02/2018	4	Sparrowhawk	2	12:15:00	180			180		Pair in display	BM
SH0054	26/02/2018	10	Sparrowhawk	2	16:45:00	90			90		Pair in display	BM
SH0055	12/03/2018	1	Sparrowhawk	1	08:13:00	20	10	10			Hunting	BM
SH0056	13/03/2018	3	Sparrowhawk	2	10:53:00	300			300		Pair in active display	BM
SH0057	20/03/2018	8	Sparrowhawk	2	08:18:00	120			120		Pair in display	BM
SH0001	19/04/2018	7	Sparrowhawk	1	10:53:00	57	12	45			GA1, (Improved agricultural grassland) circling-being mobbed by female rook	JH
SH0002	25/04/2018	6	Sparrowhawk	1	09:08:00	46		46			PB4, (Cutover bog) travelling	JH
SH0003	28/04/2018	1	Sparrowhawk	1	11:08:00	252		29	140	83	PB4, (Cutover bog) WD4, (Conifer plantation) UPWARD CIRCLING FLIGHT	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
SH0005	05/05/2018	2	Sparrowhawk	1	15:57:00	95			95		PB4, (Cutover bog) WD4, (Conifer plantation) circling up, 40 to 100 metres	P.Troake
SH0004	05/05/2018	2	Sparrowhawk	1	15:15:00	50		35	15		PB4, (Cutover bog) WD4, (Conifer plantation)	P.Troake
SH0006	05/05/2018	2	Sparrowhawk	1	16:16:00	235			235		PB4, (Cutover bog)	P.Troake
SH0007	05/06/2018	6	Sparrowhawk	1	08:37:00	24	24				GA1, (Improved agricultural grassland) Travelling	JH
SH0008	05/06/2018	6	Sparrowhawk	1	08:42:00	92			92		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling	JH
SH0009	11/06/2018	7	Sparrowhawk	1	14:16:00	184			75	109	PB4, (Cutover bog) spiralling flight Upward	JH
SH0010	09/07/2018	5	Sparrowhawk	1	10:35:00	175			175		PB4, (Cutover bog) Spiralling Flight	JH
SH0011	13/07/2018	10	Sparrowhawk	2	10:16:00	46			46		PB4, (Cutover bog) Spiralling flight	JH
SH0012	23/07/2018	4	Sparrowhawk	1	11:38:00	144	144				PB4, (Cutover bog) Hunting and flying on	JH
SH0013	14/08/2018	6	Sparrowhawk	1	10:45:00	34	34				GA1, (Improved agricultural grassland) Hunting along hedgerow	JH
SH0014	21/08/2018	8	Sparrowhawk	1	14:10:00	23	23				PB4, (Cutover bog) Travelling and hunting along scrub	JH
SH0015	04/09/2018	2	Sparrowhawk	1	10:27:00	302		34	268		PB4, (Cutover bog) WD4, (Conifer plantation) Circling upward flight and flying on	JH
SH0016	07/09/2018	5	Sparrowhawk	1	07:20:00	44	44				GA1, (Improved agricultural grassland) Travelling	JH
SH0017	11/09/2018	7	Sparrowhawk	1	10:04:00	30	30				PB4, (Cutover bog) Hunting and Flying on	JH
SH0018	10/10/2018	5	Sparrowhawk	1	17:15:00	35		35			GA1, (Improved agricultural grassland) travelling	TR



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
SH0019	11/10/2018	6	Sparrowhawk	1	15:00:00	250			80	170	GA1, (Improved agricultural grassland)	TR
SH0020	11/10/2018	6	Sparrowhawk	1	18:40:00	60	60				GA1, (Improved agricultural grassland)	TR
SH0021	16/10/2018	8	Sparrowhawk	1	15:50:00	20	20				PB4, (Cutover bog) WD4, (Conifer plantation) travelling	TR
SH0022	17/10/2018	9	Sparrowhawk	1	18:35:00	40	40				PB4, (Cutover bog) hunting	TR
SH0023	06/11/2018	1	Sparrowhawk	1	11:35:00	24	24				PB4, (Cutover bog) Travelling	JH
SH0024	14/11/2018	7	Sparrowhawk	1	12:57:00	10	10				PB4, (Cutover bog) travelling, landing	TR
SH0025	16/11/2018	10	Sparrowhawk	1	09:45:00	10	10				PB4, (Cutover bog) travelling	TR
SH0026	07/01/2019	2	Sparrowhawk	1	12:10:00	16	16				PB4, (Cutover bog) WD4, (Conifer plantation) Landing on PB4	JH
SH0027	01/03/2019	1	Sparrowhawk	1	10:59:00	275			275		PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) WD4, (Conifer plantation) Spiralling Upwards flight and flying on	JH
SH0038	07/05/2019	6	Sparrowhawk	1	10:12:00	34		34			WN7, (Bog woodland) Travelling with food item.	JK
SH0037	07/05/2019	6	Sparrowhawk	1	08:44:00	26		26			GA1, (Improved agricultural grassland) Travelling	JK
SH0039	21/05/2019	7	Sparrowhawk	1	10:55:00	27		27			PB4, (Cutover bog) WN7, (Bog woodland)	JK
SH0040	24/05/2019	10	Sparrowhawk	1	09:25:00	19	19				PB4, (Cutover bog) WN7, (Bog woodland)	JK
SH0028	03/07/2019	1	Sparrowhawk	1	12:02:50	30		30			PB4, (Cutover bog) Landing in scrub. Carrying food item. Male.	JH
SH0029	22/07/2019	4	Sparrowhawk	1	12:11:52	110		60	50		PB4, (Cutover bog) Hunting and flying on	JH
SH0030	01/08/2019	1	Sparrowhawk	1	14:04:40	10					PB4, (Cutover bog) male	TR



Vantage Point Survey													
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity		Surveyor
SH0031	01/08/2019	1	Sparrowhawk	1	14:38:58	25					PB4, (Cutover bog)	low flight	TR
SH0034	01/08/2019	2	Sparrowhawk	1	17:48:00	210		70	140		PB4, (Cutover bog)	travelling and high circling	TR
SH0033	01/08/2019	2	Sparrowhawk	1	16:38:23	20					PB4, (Cutover bog)	hunting	TR
SH0032	01/08/2019	2	Sparrowhawk	1	16:01:57	130		45	60		PB4, (Cutover bog)	circling high	TR
SH0035	07/08/2019	3	Sparrowhawk	1	17:17:33	12					PB4, (Cutover bog)	juvenile	TR
SH0036	13/09/2019	3	Sparrowhawk	1	10:41:15	200			200			circling high	TR

Breeding Bird Survey								
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity		Comments	Surveyor
SH001	01/05/2018		Sparrowhawk	1	PB4, (Cutover bog)	Hunting along edge of scrub	Male	JH
SH002	02/05/2018		Sparrowhawk	1	PB4, (Cutover bog)	Hunting	In height band 1 for 10 seconds - female	JH
SH003	24/05/2018		Sparrowhawk	1	PB4, (Cutover bog)	Travelling		JH
SH004	12/06/2018	06:47:00	Sparrowhawk	1	PB4, (Cutover bog)	Female hunting along scrub and bog		JH
SH005	12/06/2018	07:22:00	Sparrowhawk	1		Female travelling flight		JH
SH006	10/04/2019	11:27:22	Sparrowhawk	2	PB4, (Cutover bog)	Display Flight		JH
SH007	12/04/2019	11:12:47	Sparrowhawk	1	PB4, (Cutover bog)	Hunting along hedgerow		JH
SH008	12/04/2019	11:52:07	Sparrowhawk	1	PB4, (Cutover bog)	Hunting		JH
SH009	13/05/2019	10:06:08	Sparrowhawk	1	WD4, (Conifer plantation)	Female		JH



Breeding Raptor Survey							
Map Ref.	Date	Species	No. of Birds	Time of flight	Duration of flight (s)	Notes on habitat and activity	Surveyor
SH001	04/04/2018	Sparrowhawk	1	10:46:00		Travelling female	JH
SH002	05/04/2018	Sparrowhawk	1	13:15:00		Travelling female. Observed whilst leaving area in 2km buffer zone.	JH
SH003	26/06/2018	Sparrowhawk	1	15:32:00	90	PB4, (Cutover bog) WN7, (Bog woodland) GA1, (Improved agricultural grassland) carrying prey, settled in tall birch copse then flew again, still with prey, beyond copse. Behaviour indicative of nesting close by, most likely in tall birches or spruce	P Troake
SH004	09/07/2018	Sparrowhawk	1	17:18:00	20	WD, (Highly modified/ non-native woodland) mobbing PE, high	P Troake
N/A	10/07/2018	Sparrowhawk	1	08:19:00	10	GA1, (Improved agricultural grassland) at VP, low over pasture to tree	P Troake
SH005	10/07/2018	Sparrowhawk	1	12:48:00	540	GA1, (Improved agricultural grassland) circled up high, plunged to second bird	P Troake
SH006	30/05/2019	Sparrowhawk	1	15:55:00	30	WN7, (Bog woodland) Male	JK
SH007	05/06/2019	Sparrowhawk	1	09:41:40		WD4, (Conifer plantation) GA1, (Improved agricultural grassland) Female flying and carrying food parcel	JH
SH008	05/06/2019	Sparrowhawk	1	11:05:28		WD4, (Conifer plantation) Travelling in band 2	JH
SH009	17/06/2019	Sparrowhawk	1	14:40:44		WD4, (Conifer plantation) (Mixed) Conifer woodland Hunting	JH
SH010	26/07/2019	Sparrowhawk	4	12:59:53		WD4, (Conifer plantation) 3 Juveniles calling adult birds. Adult female in attendance. Nesting location	JH

Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
SH001	21/11/2018	10:28:00	Sparrowhawk	1		PB4, (Cutover bog) WS1, (Scrub) Female hunting over bog and grassland	JH
SH002	03/01/2019	11:06:00	Sparrowhawk	1		Female travelling overhead	JH

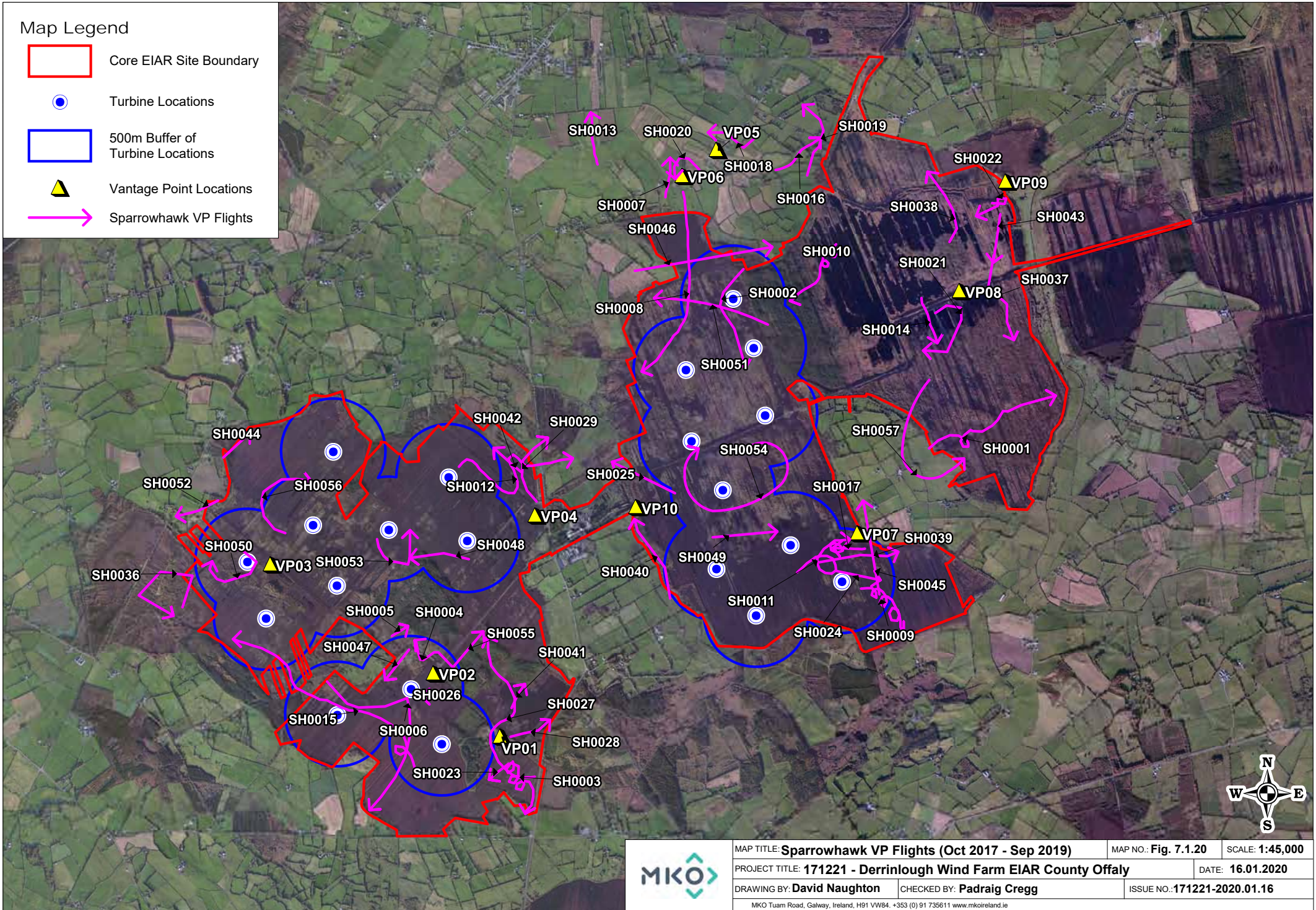


Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
SH003	03/01/2019	11:34:00	Sparrowhawk	1		Female hunting along hedgerow	JH
SH004	13/03/2019	09:07:00	Sparrowhawk	1		PB4, (Cutover bog) WSI, (Scrub) Hunting along edge of scrub	JH

Incidental Observations							
Date	Survey Type	Location	Species	No. of Birds	Notes		Surveyor
17/01/2019	Commuting/ Migratory VP	CMVP2	Sparrowhawk	1	WD4, (Conifer plantation)	Hunting Passerines	TR
25/01/2019	Commuting/ Migratory VP	CMVP5	Sparrowhawk	1	Travelling Fast		TR
25/01/2019	Commuting/ Migratory VP	CMVP5	Sparrowhawk	1	WD4, (Conifer plantation)	Gliding High, Stooping	TR
07/02/2019	VP Survey	East of VP7	Sparrowhawk	1	male flying into scrub area		TR
24/09/2019	Wildfowl Counts	Close to VP7	Sparrowhawk	1	Female hunting		JH
26/09/2019	Commuting/ Migratory VP	CMVP3	Sparrowhawk	1	Female hunting along hedgerow		JH
27/09/2019	Wildfowl Counts	VP4	Sparrowhawk	1	Female perched on pile of bog oak.		JH




Map Legend

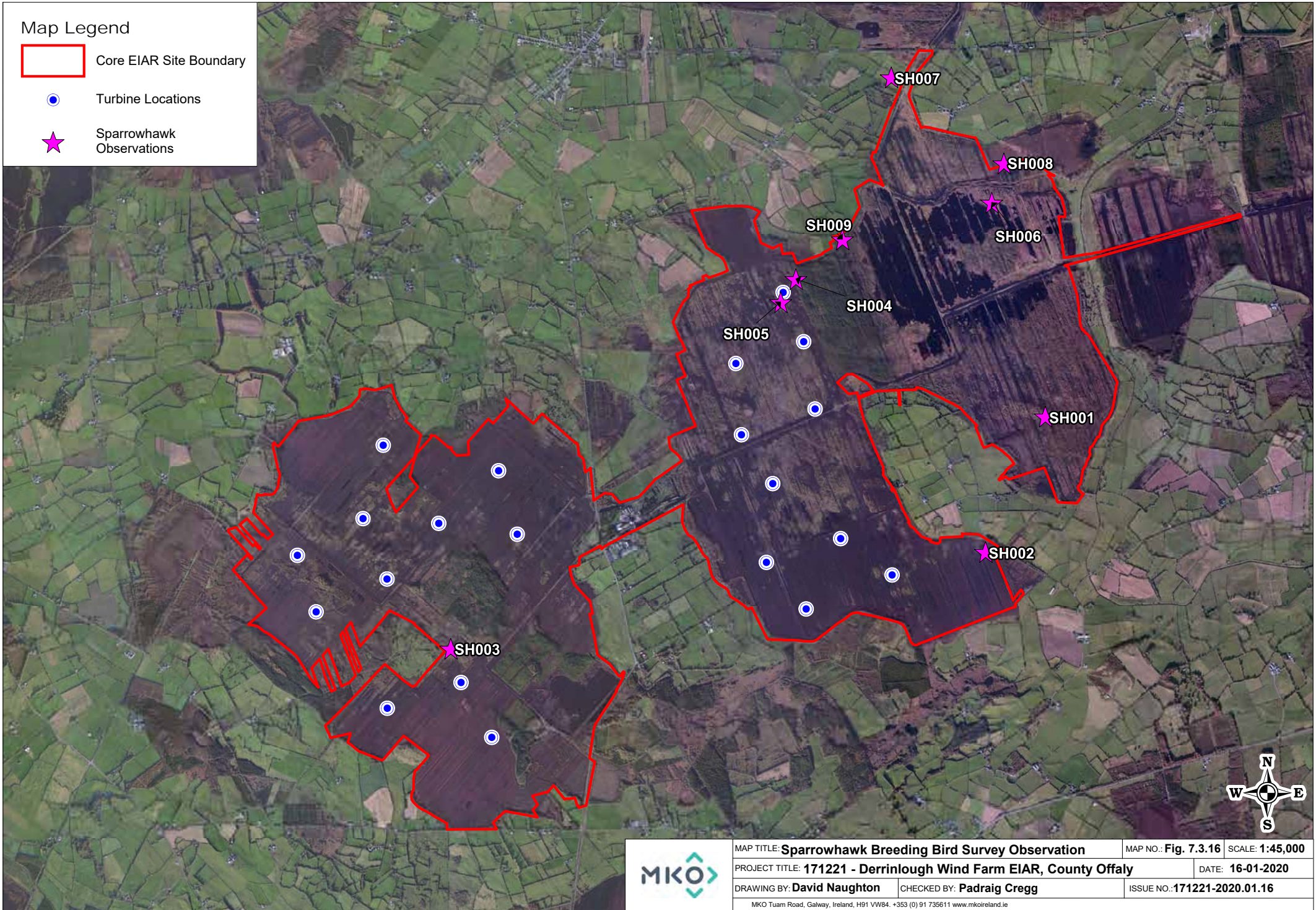
- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ Vantage Point Locations
- Sparrowhawk VP Flights



	MAP TITLE: Sparrowhawk VP Flights (Oct 2017 - Sep 2019)		MAP NO.: Fig. 7.1.20	SCALE: 1:45,000
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR County Offaly			DATE: 16.01.2020
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg	
	ISSUE NO.: 171221-2020.01.16			
<small>MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie</small>				

Map Legend

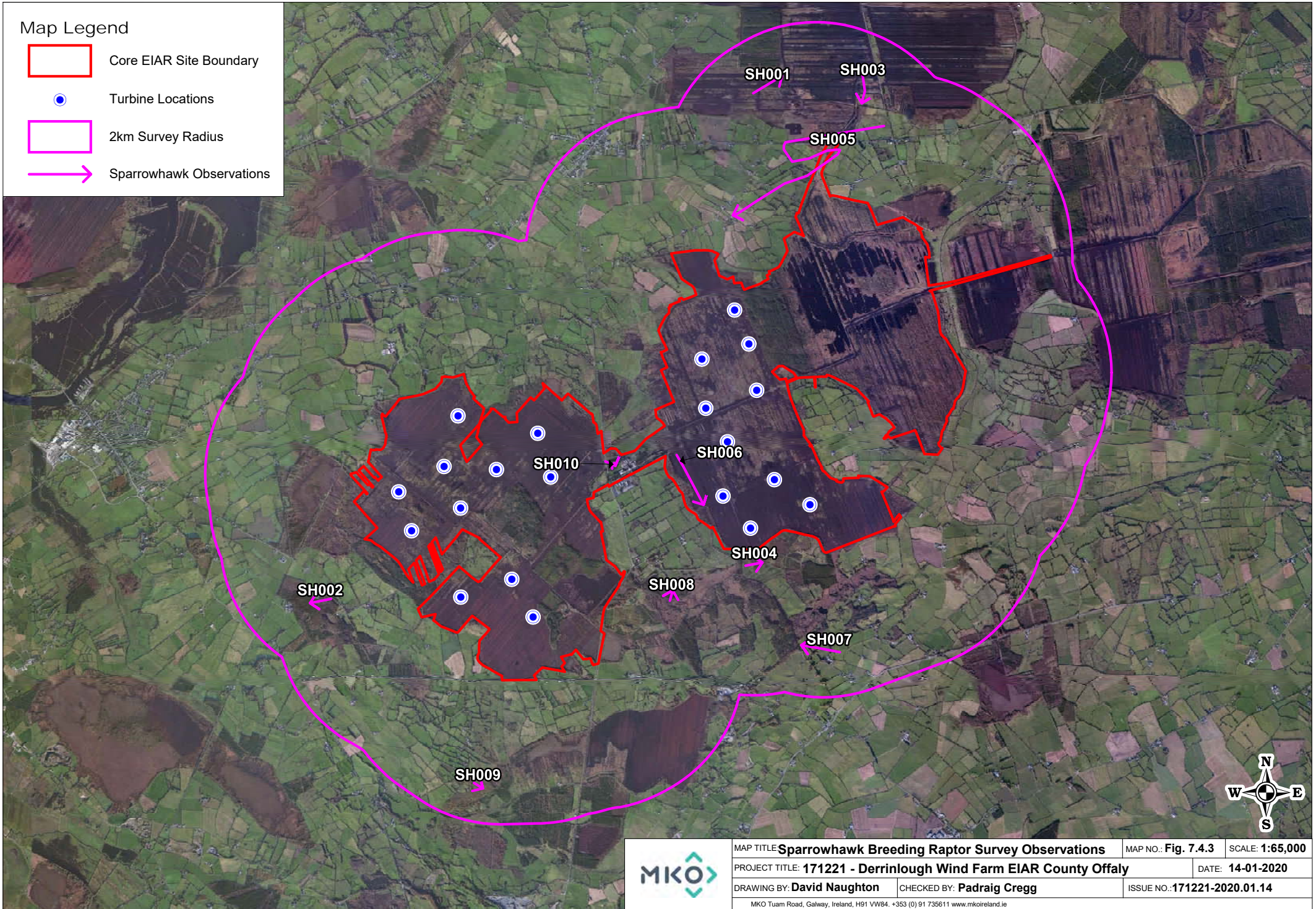
-  Core EIAR Site Boundary
-  Turbine Locations
-  Sparrowhawk Observations



	MAP TITLE: Sparrowhawk Breeding Bird Survey Observation	MAP NO.: Fig. 7.3.16	SCALE: 1:45,000
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly	DATE: 16-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16
	<small>MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie</small>		

Map Legend

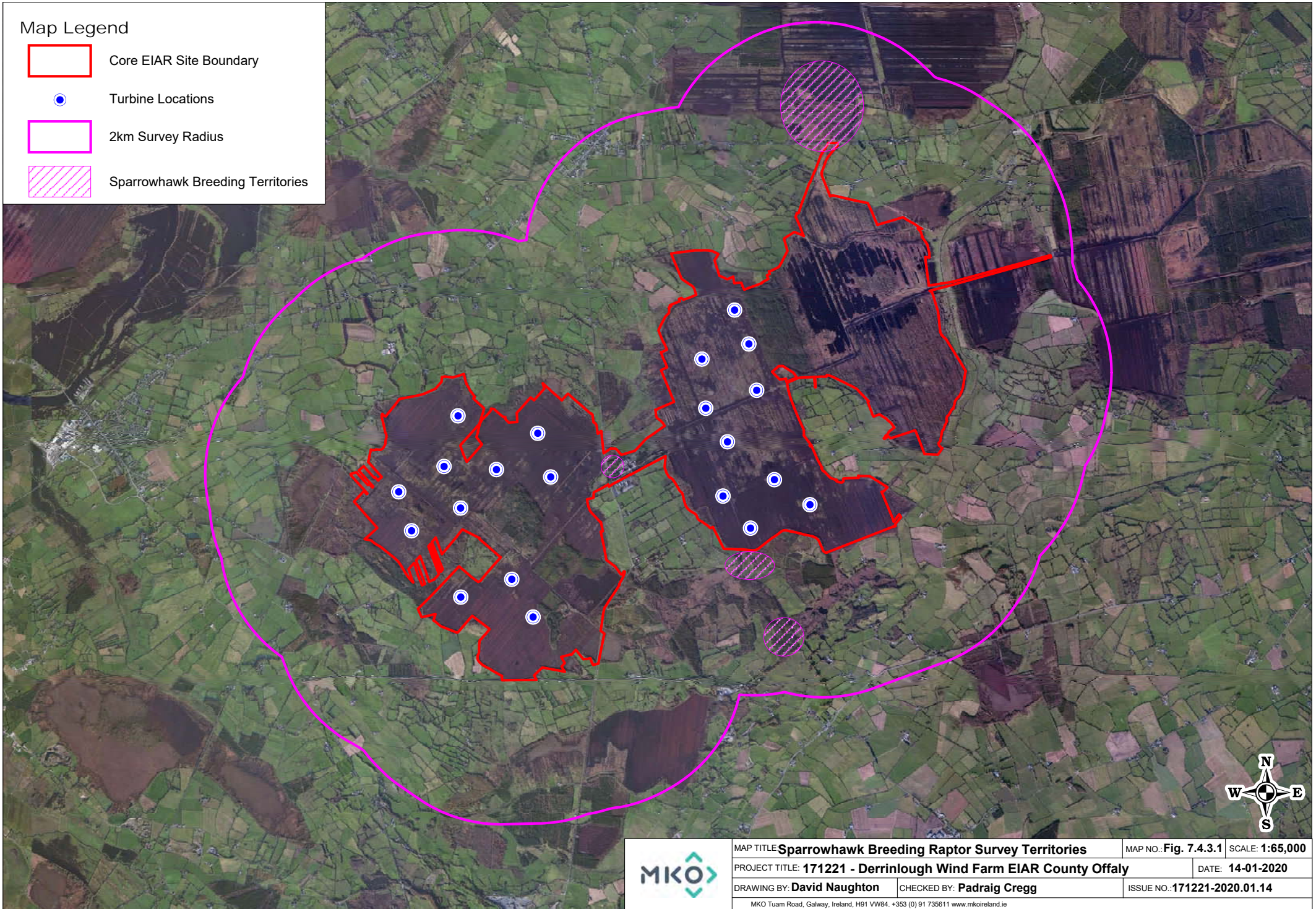
- Core EIAR Site Boundary
- Turbine Locations
- 2km Survey Radius
- Sparrowhawk Observations



	MAP TITLE: Sparrowhawk Breeding Raptor Survey Observations	MAP NO.: Fig. 7.4.3	SCALE: 1:65,000	
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR County Offaly		DATE: 14-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.14	
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Map Legend

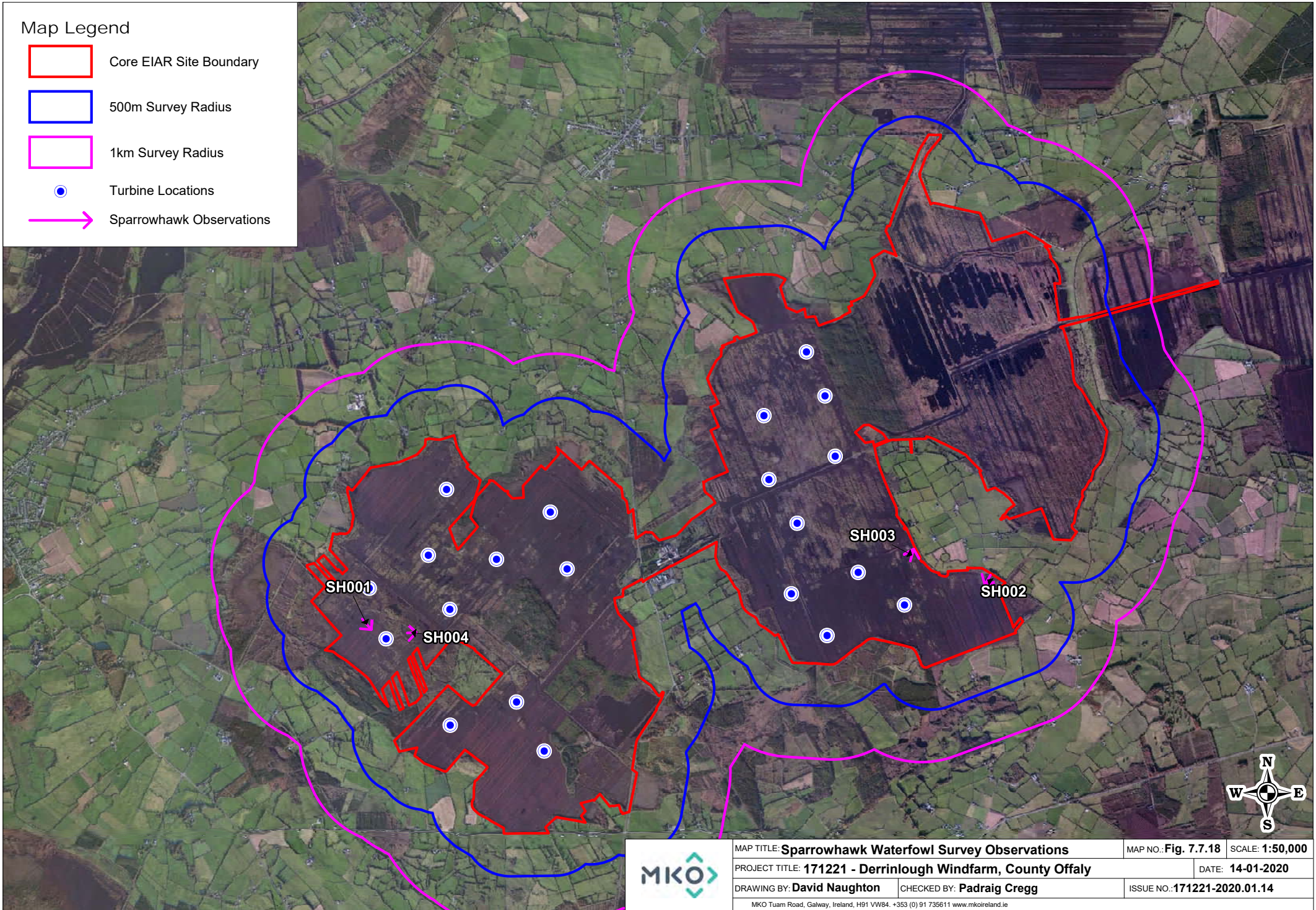
-  Core EIAR Site Boundary
-  Turbine Locations
-  2km Survey Radius
-  Sparrowhawk Breeding Territories



	MAP TITLE: Sparrowhawk Breeding Raptor Survey Territories	MAP NO.: Fig. 7.4.3.1	SCALE: 1:65,000	
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR County Offaly		DATE: 14-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.14	
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Map Legend

-  Core EIAR Site Boundary
-  500m Survey Radius
-  1km Survey Radius
-  Turbine Locations
-  Sparrowhawk Observations



	MAP TITLE: Sparrowhawk Waterfowl Survey Observations		MAP NO.: Fig. 7.7.18	SCALE: 1:50,000	
	PROJECT TITLE: 171221 - Derrinlough Windfarm, County Offaly			DATE: 14-01-2020	
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.14
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Table 23 Kestrel Survey Data

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
K0310	09/10/2017	6	Kestrel	1	14:45:00	60			60		Hunting to the NE of factory, drifted off W.	SON
K0311	09/10/2017	7	Kestrel	2	12:34:00	30			30		Hunting scrub to the N of VP	SONeill
K0312	09/10/2017	7	Kestrel	1	11:02:00	10	5	5			Flying E off site	SONeill
K0313	10/10/2017	5	Kestrel	1	12:00:00	60			60		Hunting NW edge of the site drifting NE.	SON
K0314	10/10/2017	6	Kestrel	1	08:22:00	120	60	60			Hunting scrub N of tracks S of VP	SON
K0315	12/10/2017	2	Kestrel	1	08:47:00	60	30	30			Flying	BM
K0315	13/10/2017	4	Kestrel	1	15:04:00	30	15	15			Hunting. Dropped to ground - not seen again	JA
K0316	17/10/2017	9	Kestrel	1	16:04:00	60			60		Male flew north	BM
K0317	19/10/2017	8	Kestrel		12:25:00	90	45	45			Hunting	BM
K0318	23/10/2017	7	Kestrel	3	14:35:00	180	90	90			Hunting scrub to the NW of VP. S of tracks 1 flew S others drifted N.	SON
K0319	13/11/2017	3	Kestrel	1	08:55:00	60	30	30			Hunting	BM
K0320	14/11/2017	5	Kestrel	1	16:37:00	30	15	15			Flying W over tracks in far S of east Drinagh.	SON
K0321	14/11/2017	6	Kestrel	1	12:55:00	120	60	60			Hunting fields N of site hunting to the W. (>500 m)	SON
K0322	15/11/2017	6	Kestrel	1	10:41:00	180			180		Hunting tracks to the SW of VP. Hunting east.	SON
K0323	09/12/2017	5	Kestrel	1	15:50:00	10					Hunting to the N of the site	SÓneill
K0324	12/12/2017	7	Kestrel	2	08:26:00	90	45	45			Flew in from east heading west hunting as they went	SON



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
K0325	12/12/2017	7	Kestrel	1	08:34:00	45	25	20			Flew from the E just N of VP flew W turned S	SON
K0326	14/12/2017	7	Kestrel	4	13:03:00	360			360		3 males 1 female mobbing each other looked to be play in the wind drifted E	SON
K0327	18/12/2017	1	Kestrel	1	13:59:00	60	30	30			Hunting along edge of conifers	BM
K0328	19/12/2017	3	Kestrel	1	19:45:00	60	30	30			Hunting over cutover bog	BM
K0329	08/01/2018	7	Kestrel	2	09:03:00	30	15	15			Flew from E flying W circled and flew back out E. Second seen leaving perch off site to the E.	SON
K0330	09/01/2018	5	Kestrel	1	13:45:00	10			10		Flew N out of sight	SON
K0331	10/01/2018	7	Kestrel	1	11:50:00	300			300		Flew in from the east started to hunt the scrub to north west of VP3	SON
K0332	16/01/2018	8	Kestrel	1	08:55:00	60	30	30			Hunting	BM
K0333	01/02/2018	6	Kestrel	1	13:03:00	780			780		Hunting north of the tracks.	SON
K0334	15/02/2018	2	Kestrel	1	09:14:00	30	15	15			Hunting	BM
K0335	06/03/2018	6	Kestrel	1	14:30:00	120			120		Hunting scrubs S of tracks.	SON
K0336	12/03/2018	4	Kestrel	1	14:08:00	60	30	30			Hunting	BM
K0337	15/03/2018	8	Kestrel	1	10:01:00	120	60	60			Hunting	SON
K0338	24/03/2018	7	Kestrel	1	14:04:00	120			120		Circling over scrub to NW of VP.	SON
K0001	26/04/2018	10	Kestrel	1	06:13:00	195		195			PB4, (Cutover bog) hunting and hovering	JH
K0002	26/04/2018	10	Kestrel	1	10:18:00	84	20	64			PB4, (Cutover bog) hunting and hovering	JH
K0004	03/05/2018	9	Kestrel	1	19:06:00	97		97			PB4, (Cutover bog) Hunting, hovering and flying on	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
K0005	03/05/2018	9	Kestrel	1	20:23:00	358			358		PB4, (Cutover bog) Hunting, hovering and flying on	JH
K0003	03/05/2018	9	Kestrel	1	16:22:00	98	26	72			PB4, (Cutover bog) Hunting and Hovering	JH
K0006	08/05/2018	3	Kestrel	1	16:58:00	87		73	14		PB4, (Cutover bog) Hunting, hovering and landing on wind mast	JH
K0008	10/05/2018	5	Kestrel	1	16:55:00	28		28			GA1, (Improved agricultural grassland) Travelling	JH
K0007	10/05/2018	5	Kestrel	1	15:50:00	35		35			PB4, (Cutover bog) Hunting and Hovering	JH
K0009	15/05/2018	6	Kestrel	1	16:41:00	293		293			PB4, (Cutover bog) Hunting and Hovering	JH
K0010	15/05/2018	6	Kestrel	1	20:26:00	118		118			GA1, (Improved agricultural grassland) Hunting and Hovering	JH
K0011	17/05/2018	7	Kestrel	1	17:03:00	147	7	140			PB4, (Cutover bog) Hunting, hovering and landing in scrub on PB4	JH
K0309	20/05/2018	10	Kestrel	1	12:18:00	178			178		PB4, (Cutover bog) Hunting, hovering and flying on	JH
K0012	23/05/2018	8	Kestrel	1	17:34:00	76	10	16	50		PB4, (Cutover bog) Hunting and Hovering	JH
K0013	23/05/2018	8	Kestrel	2	19:53:00	28	28				PB4, (Cutover bog) Courtship Display - Male Chasing female	JH
K0014	25/05/2018	1	Kestrel	1	09:45:00	100		100			W, (Woodland and scrub) PB4, (Cutover bog) hunting	P.Troake
K0015	30/05/2018	10	Kestrel	1	20:33:00	248			248		PB4, (Cutover bog) Hunting, hovering and flying on	JH
K0306	01/06/2018	5	Kestrel	1	11:30:00	75	15	60			PB4, (Cutover bog) Hunting and Hovering	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
K0307	01/06/2018	5	Kestrel	1	13:53:00	155			155		PB4, (Cutover bog) Hunting and Hovering	JH
K0308	01/06/2018	5	Kestrel	1	14:06:00	23	5	18			PB4, (Cutover bog) Hunting and Hovering	JH
K0019	05/06/2018	6	Kestrel	1	12:12:00	77	77				GA1, (Improved agricultural grassland) PB4, (Cutover bog) Hunting, hovering and landing on hedgerow	JH
K0017	05/06/2018	6	Kestrel	1	11:12:00	46	46				PB4, (Cutover bog) GA1, (Improved agricultural grassland) Hunting, Hovering and landing on ESB pole	JH
K0016	05/06/2018	6	Kestrel	1	09:53:00	19	4	15			PB4, (Cutover bog) Hunting and Hovering	JH
K0018	05/06/2018	6	Kestrel	1	11:24:00	65		65			GA1, (Improved agricultural grassland) PB4, (Cutover bog) Carrying prey item	JH
K0020	11/06/2018	7	Kestrel	1	14:59:00	22	8	14			PB4, (Cutover bog) Hunting, hovering and landing on PB4	JH
K0021	14/06/2018	9	Kestrel	1	13:06:00	114	114				PB4, (Cutover bog) Hunting, hovering and landing in scrub.	JH
K0022	14/06/2018	9	Kestrel	1	13:31:00	70		70			PB4, (Cutover bog) Hunting and Hovering	JH
K0023	14/06/2018	9	Kestrel	1	13:37:00	64	4	60			PB4, (Cutover bog) Hunting and Hovering	JH
K0024	14/06/2018	9	Kestrel	1	14:04:00	68		68			Hunting and Hovering	JH
K0026	18/06/2018	8	Kestrel	1	10:38:00	55	5	50			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Hunting, hovering and landing in scrub.	JH
K0025	18/06/2018	8	Kestrel	1	09:28:00	269	10	20	239		PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and Hovering	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
K0027	18/06/2018	8	Kestrel	1	11:08:00	117	87	30			PB4, (Cutover bog) Hunting and Hovering	JH
K0028	18/06/2018	8	Kestrel	1	12:32:00	134			134		PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and Hovering	JH
K0029	20/06/2018	10	Kestrel	1	13:39:00	106	10	96			PB4, (Cutover bog) Flying and landing on PB4	JH
K0030	10/07/2018	6	Kestrel	1	13:26:00	90		70	20		PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and Hovering	JH
K0031	11/07/2018	7	Kestrel	1	09:05:00	46	46				PB4, (Cutover bog) Travelling	JH
K0032	12/07/2018	9	Kestrel	1	11:18:00	240		42	120	78	PB4, (Cutover bog) Upward spiralling flight	JH
K0033	13/07/2018	10	Kestrel	1	10:25:00	164	5	5	154		PB4, (Cutover bog) Hunting, hovering and landing in Scrub	JH
K0036	18/07/2018	2	Kestrel	1	13:46:00	34	10	24			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting, hovering and landing on PB4	JH
K0037	18/07/2018	2	Kestrel	1	14:04:00	40	10	30			PB4, (Cutover bog) Hunting, hovering and landing in Scrub	JH
K0038	18/07/2018	2	Kestrel	1	14:33:00	230	20	60	150		PB4, (Cutover bog) Hunting, hovering and landing in Scrub	JH
K0034	18/07/2018	2	Kestrel	1	12:53:00	47	7	40			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and Hovering	JH
K0035	18/07/2018	2	Kestrel	1	12:58:00	158		158			PB4, (Cutover bog) WD4, (Conifer plantation) GA1, (Improved agricultural grassland) Hunting and Hovering	JH
K0039	19/07/2018	3	Kestrel	1	10:16:00	90		24	66		PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and Hovering	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
K0040	23/07/2018	4	Kestrel	1	14:58:00	58	58				PB4, (Cutover bog) Hunting, hovering and landing on PB4	JH
K0046	24/07/2018	8	Kestrel	1	15:02:00	30	5	25			PB4, (Cutover bog) Hunting, hovering and landing in Scrub	JH
K0042	24/07/2018	8	Kestrel	1	10:03:00	183		50	133		PB4, (Cutover bog) WD4, (Conifer plantation) Hunting, hovering and flying on	JH
K0043	24/07/2018	8	Kestrel	1	11:00:00	417			140	277	PB4, (Cutover bog) Hunting, hovering and flying on	JH
K0041	24/07/2018	8	Kestrel	1	09:56:00	86	20	66			PB4, (Cutover bog) Hunting and Hovering	JH
K0044	24/07/2018	8	Kestrel	1	13:08:00	222			222		PB4, (Cutover bog) Hunting and Hovering	JH
K0045	24/07/2018	8	Kestrel	1	13:30:00	90	90				PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and Hovering	JH
K0047	24/07/2018	8	Kestrel	1	15:06:00	56	56				PB4, (Cutover bog) Hunting and Hovering	JH
K0050	07/08/2018	3	Kestrel	1	12:24:00	154	20	134			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting, hovering and landing in WD4	JH
K0049	07/08/2018	3	Kestrel	1	12:06:00	130	38	92			PB4, (Cutover bog) Hunting, hovering and flying on	JH
K0051	07/08/2018	3	Kestrel	1	14:21:00	192		192			PB4, (Cutover bog) Hunting, hovering and landing on Weather Mast	JH
K0048	07/08/2018	3	Kestrel	1	11:25:00	189	189				PB4, (Cutover bog) Hunting, hovering and landing on PB4	JH
K0052	08/08/2018	4	Kestrel	1	10:50:00	38		38			PB4, (Cutover bog) Travelling	JH
K0053	08/08/2018	4	Kestrel	1	11:49:00	50	10	40			PB4, (Cutover bog) Travelling	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
K0055	08/08/2018	4	Kestrel	1	12:03:00	308	30	278			PB4, (Cutover bog) Hunting, hovering and landing in Scrub	JH
K0054	08/08/2018	4	Kestrel	1	11:56:00	157	157				PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and Hovering	JH
K0056	13/08/2018	5	Kestrel	1	12:16:00	46		46			PB4, (Cutover bog) Travelling	JH
K0057	13/08/2018	5	Kestrel	1	14:11:00	38	38				PB4, (Cutover bog) Hunting and Hovering	JH
K0070	13/08/2018	5	Kestrel	1	14:19:00	175	10	165			GA1, (Improved agricultural grassland) Hunting and Hovering	JH
K0058	14/08/2018	6	Kestrel	1	12:14:00	92	92				GA1, (Improved agricultural grassland) Hunting and Hovering	JH
K0059	14/08/2018	6	Kestrel	1	14:06:00	98	30	68			GA1, (Improved agricultural grassland) Hunting and Hovering	JH
K0061	20/08/2018	7	Kestrel	1	14:24:00	283	283				PB4, (Cutover bog) Hunting, hovering and flying on	JH
K0060	20/08/2018	7	Kestrel	1	14:11:00	68	68				PB4, (Cutover bog) Hunting and Hovering	JH
K0062	21/08/2018	8	Kestrel	1	09:31:00	139	10	129			PB4, (Cutover bog) Hunting, hovering and landing in Scrub	JH
K0063	22/08/2018	9	Kestrel	1	09:41:00	205		205			PB4, (Cutover bog) Hunting and Hovering	JH
K0064	22/08/2018	9	Kestrel	1	11:02:00	98	18	80			GA1, (Improved agricultural grassland) WD4, (Conifer plantation) Hunting and Hovering	JH
K0065	22/08/2018	9	Kestrel	1	11:31:00	77		77			PB4, (Cutover bog) Hunting and Hovering	JH
K0066	22/08/2018	9	Kestrel	1	13:21:00	211		211			PB4, (Cutover bog) Hunting and Hovering	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
K0067	22/08/2018	9	Kestrel	1	13:41:00	163		163			PB4, (Cutover bog) Hunting and Hovering	JH
K0069	23/08/2018	10	Kestrel	1	11:23:00	198		198			PB4, (Cutover bog) Hunting, hovering and flying on	JH
K0068	23/08/2018	10	Kestrel	1	10:08:00	270		109	161		PB4, (Cutover bog) Hunting and Hovering	JH
K0072	03/09/2018	1	Kestrel	2	11:53:00	182		182			GA1, (Improved agricultural grassland) PB4, (Cutover bog) One adult male and one juvenile male. Hunting, hovering and flying on	JH
K0071	03/09/2018	1	Kestrel	1	11:25:00	57		57			GA1, (Improved agricultural grassland) Hunting and Flying on	JH
K0073	06/09/2018	4	Kestrel	1	12:08:00	62	10	52			PB4, (Cutover bog) Hunting, hovering and landing in scrub	JH
K0074	07/09/2018	5	Kestrel	1	10:52:00	22	22				GA1, (Improved agricultural grassland) Hunting, hovering and landing in scrub	JH
K0075	07/09/2018	5	Kestrel	1	11:49:00	129	10	119			PB4, (Cutover bog) Hunting, hovering and landing in scrub	JH
K0076	10/09/2018	6	Kestrel	1	11:48:00	68	68				GA1, (Improved agricultural grassland) PB4, (Cutover bog) Travelling	JH
K0077	10/09/2018	6	Kestrel	1	12:06:00	62	62				GA1, (Improved agricultural grassland) Hunting and Hovering	JH
K0079	11/09/2018	7	Kestrel	1	12:23:00	189	42	147			PB4, (Cutover bog) Hunting, hovering and landing on PB4	JH
K0078	11/09/2018	7	Kestrel	1	11:38:00	232	106	126			PB4, (Cutover bog) Hunting, hovering and landing in scrub	JH
K0080	28/09/2018	10	Kestrel	1	11:57:00	153		153			PB4, (Cutover bog) Hunting, hovering and flying on	JH



Vantage Point Survey												
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K0081	28/09/2018	10	Kestrel	1	12:33:00	204		88	116		PB4, (Cutover bog) Hunting, hovering and flying on	JH
K0082	28/09/2018	10	Kestrel	1	12:50:00	159		159			PB4, (Cutover bog) Hunting and Hovering	JH
K0083	28/09/2018	10	Kestrel	1	12:50:00	64			64		PB4, (Cutover bog) Hunting and Hovering	JH
K0086	10/10/2018	5	Kestrel	1	14:50:00	10	10				travelling	TR
K0089	10/10/2018	5	Kestrel	1	18:30:00	30		30			GA1, (Improved agricultural grassland) travelling	TR
K0085	10/10/2018	5	Kestrel	1	14:30:00	150		150			PB4, (Cutover bog) hunting before perching	TR
K0084	10/10/2018	5	Kestrel	1	13:30:00	300	100	200			PB4, (Cutover bog) hunting	TR
K0088	10/10/2018	5	Kestrel	1	18:30:00	60		60			GA1, (Improved agricultural grassland) hunting	TR
K0087	10/10/2018	5	Kestrel	1	15:10:00	540		540			female hunting	TR
K0090	11/10/2018	6	Kestrel	1	13:50:00	100		100			PB4, (Cutover bog)	TR
K0091	11/10/2018	6	Kestrel	1	14:00:00	130		30	100		PB4, (Cutover bog)	TR
K0092	11/10/2018	6	Kestrel	1	14:15:00	180	20	60	100		GA1, (Improved agricultural grassland) PB4, (Cutover bog)	TR
K0093	12/10/2018	7	Kestrel	1	15:20:00	540		540			PB4, (Cutover bog) hunting	TR
K0094	12/10/2018	7	Kestrel	1	18:55:00	180	60	120			PB4, (Cutover bog) hunting	TR
K0101	16/10/2018	3	Kestrel	1	15:10:00	108	10	98			PB4, (Cutover bog) Hunting, hovering and landing in Scrub	JH
K0098	16/10/2018	3	Kestrel	1	13:59:00	20	20				PB4, (Cutover bog) Hunting and landing in Scrub	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
K0097	16/10/2018	3	Kestrel	1	13:22:00	51		51			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Hunting and Hovering	JH
K0099	16/10/2018	3	Kestrel	1	14:11:00	168		168			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and Hovering	JH
K0100	16/10/2018	3	Kestrel	1	14:23:00	102		102			PB4, (Cutover bog) Hunting and Hovering	JH
K0095	16/10/2018	8	Kestrel	1	15:40:00	180		180			PB4, (Cutover bog) hunting	TR
K0096	16/10/2018	8	Kestrel	1	17:05:00	85			85		PB4, (Cutover bog) hunting	TR
K0103	17/10/2018	9	Kestrel	1	15:00:00	75	45	30			PB4, (Cutover bog) travelling	TR
K0102	17/10/2018	9	Kestrel	1	13:40:00	5	5				PB4, (Cutover bog) Perched on poles before flying	TR
K0104	18/10/2018	10	Kestrel	1	14:00:00	720	20	100	500	100	PB4, (Cutover bog) hunting	TR
K0105	18/10/2018	10	Kestrel	1	14:15:00	200		100	100		PB4, (Cutover bog) hunting	TR
K0106	18/10/2018	10	Kestrel	1	15:10:00	40		40			PB4, (Cutover bog) hunting	TR
K0107	18/10/2018	10	Kestrel	2	15:25:00	310		60	250		PB4, (Cutover bog) hunting	TR
K0108	18/10/2018	10	Kestrel	1	16:38:00	20		20			PB4, (Cutover bog) hunting	TR
K0109	23/10/2018	4	Kestrel	1	12:51:00	408	84	324			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting, hovering and landing in Scrub	JH
K0111	23/10/2018	4	Kestrel	1	14:59:00	177	177				PB4, (Cutover bog) Hunting, hovering and landing in Scrub	JH
K0110	23/10/2018	4	Kestrel	1	13:03:00	417	263	154			PB4, (Cutover bog) Hunting and Hovering	JH
K0112	07/11/2018	6	Kestrel	1	12:42:00	210		210			PB4, (Cutover bog)	TR
K0114	15/11/2018	9	Kestrel	1	11:50:00	70		70			PB4, (Cutover bog) hunting, travelling	TR



Vantage Point Survey												
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K0113	15/11/2018	9	Kestrel	1	07:50:00	460		400	60		PB4, (Cutover bog) hunting	TR
K0115	15/11/2018	9	Kestrel	1	12:35:00	215		215			PB4, (Cutover bog) hunting	TR
K0116	15/11/2018	9	Kestrel	1	12:40:00	200		200			PB4, (Cutover bog) hunting	TR
K0118	16/11/2018	2	Kestrel	1	10:32:00	91	10	81			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting, hovering and landing in Scrub	JH
K0117	16/11/2018	2	Kestrel	1	09:12:00	127		127			GA1, (Improved agricultural grassland) WD4, (Conifer plantation) Flying and Landing in WD4	JH
K0119	22/11/2018	7	Kestrel	1	08:15:00	190	190				PB4, (Cutover bog) hunting	TR
K0120	22/11/2018	7	Kestrel	1	09:00:00	220	220				PB4, (Cutover bog) hunting	TR
K0121	22/11/2018	7	Kestrel	1	09:20:00	750	750				PB4, (Cutover bog) hunting	TR
K0122	30/11/2018	4	Kestrel	1	12:11:00	182		48	134		PB4, (Cutover bog) Hunting, hovering and gliding on wind	JH
K0123	30/11/2018	4	Kestrel	1	13:43:00	374		331	43		PB4, (Cutover bog) Hunting and Hovering	JH
K0124	04/12/2018	5	Kestrel	1	12:05:00	30		30			GA1, (Improved agricultural grassland) Travelling	JH
K0125	07/12/2018	6	Kestrel	1	12:10:00	164		164			GA1, (Improved agricultural grassland) Hunting and Hovering	JH
K0129	10/12/2018	7	Kestrel	1	13:24:00	65	65				PB4, (Cutover bog) GA1, (Improved agricultural grassland) Hunting, Hovering and flying on	JH
K0130	10/12/2018	7	Kestrel	1	13:31:00	203	203				PB4, (Cutover bog) GA1, (Improved agricultural grassland) Hunting, Hovering and flying on	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
K0126	10/12/2018	7	Kestrel	1	08:42:00	445		445			PB4, (Cutover bog) Hunting and Hovering	JH
K0127	10/12/2018	7	Kestrel	1	11:15:00	312		312			PB4, (Cutover bog) Hunting and Hovering	JH
K0128	10/12/2018	7	Kestrel	1	13:10:00	395	184	211			PB4, (Cutover bog) Hunting and Hovering	JH
K0131	12/12/2018	9	Kestrel	1	09:09:00	36	36				GA1, (Improved agricultural grassland) FW2, (Depositing/upland rivers) Travelling	JH
K0137	12/12/2018	9	Kestrel	1	13:36:00	92	92				PB4, (Cutover bog) GA1, (Improved agricultural grassland) Hunting, hovering and landing on Telegraph Pole	JH
K0135	12/12/2018	9	Kestrel	1	12:02:00	35	35				PB4, (Cutover bog) Hunting, hovering and landing in Scrub	JH
K0136	12/12/2018	9	Kestrel	1	13:29:00	209	185	24			PB4, (Cutover bog) Hunting, hovering and landing in Scrub	JH
K0132	12/12/2018	9	Kestrel	1	11:16:00	142		142			PB4, (Cutover bog) Hunting, Hovering and flying on	JH
K0134	12/12/2018	9	Kestrel	1	11:48:00	82	82				PB4, (Cutover bog) GA1, (Improved agricultural grassland) Hunting, Hovering and flying on	JH
K0139	12/12/2018	9	Kestrel	1	13:52:00	322		322			PB4, (Cutover bog) Hunting, Hovering and flying on	JH
K0133	12/12/2018	9	Kestrel	1	11:40:00	54	54				GA1, (Improved agricultural grassland) FW2, (Depositing/upland rivers) Hunting and Hovering	JH
K0138	12/12/2018	9	Kestrel	1	13:39:00	243	202	41			PB4, (Cutover bog) Hunting and Hovering	JH
K0140	19/12/2018	10	Kestrel	1	12:25:00	60		60			PB4, (Cutover bog) hunting	TR



Vantage Point Survey												
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K0141	19/12/2018	10	Kestrel	1	12:45:00	570			500	70	PB4, (Cutover bog) hunting	TR
K0143	11/01/2019	3	Kestrel	1	13:39:00	30	30				PB4, (Cutover bog) Hunting, hovering and landing in Scrub	JH
K0144	11/01/2019	3	Kestrel	1	13:50:00	117		117			PB4, (Cutover bog) Hunting, hovering and landing in Scrub	JH
K0142	11/01/2019	3	Kestrel	1	11:31:00	79		79			PB4, (Cutover bog) Hunting and Hovering	JH
K0146	16/01/2019	4	Kestrel	1	16:13:00	15	15				PB4, (Cutover bog) Landing and perching in spruce trees	JH
K0147	16/01/2019	4	Kestrel	1	16:19:00	343	212	131			PB4, (Cutover bog) Hunting, hovering and landing in trees	JH
K0148	16/01/2019	4	Kestrel	1	16:43:00	244	50	194			PB4, (Cutover bog) Hunting, hovering and landing in trees	JH
K0145	16/01/2019	4	Kestrel	1	11:57:00	124		124			PB4, (Cutover bog) Hunting, hovering and being mobbed by HC.	JH
K0149	16/01/2019	4	Kestrel	1	17:04:00	325	48	277			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting, hovering and being harassed by BZ	JH
K0150	07/02/2019	4	Kestrel	1	12:11:00	186	30	156			PB4, (Cutover bog) Hunting, hovering and landing on PB4	JH
K0152	07/02/2019	4	Kestrel	1	12:42:00	80		80			PB4, (Cutover bog) Hunting, hovering and flying on	JH
K0151	07/02/2019	4	Kestrel	1	12:17:00	94	10	84			PB4, (Cutover bog) Hunting and hovering and landing in trees	JH
K0153	12/02/2019	3	Kestrel	1	14:14:00	79	79				PB4, (Cutover bog) Hunting and Flying on	JH
K0154	13/02/2019	2	Kestrel	1	12:42:00	30	30				PB4, (Cutover bog) WD4, (Conifer plantation) Travelling	JH



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K0155	13/02/2019	2	Kestrel	1	16:02:00	107	107				PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and Hovering .	JH
K0156	07/03/2019	4	Kestrel	1	10:03:00	47		47			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and Hovering	JH
K0157	04/04/2019	7	Kestrel	1	16:25:00	90		60	30		PB4, (Cutover bog) male hunting	TR
K0158	11/04/2019	2	Kestrel	1	15:23:40	227		70	157		PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and Hovering	JH
K0159	16/04/2019	3	Kestrel	1	15:29:47	166		40	126		PB4, (Cutover bog) Soaring Flight	JH
K0160	16/04/2019	3	Kestrel	1	15:38:12	98		98			PB4, (Cutover bog) Hunting and hovering. Male	JH
K0162	18/04/2019	10	Kestrel	1	17:40:43	292		89	203		PB4, (Cutover bog) Hunting, hovering and landing in scrub. Male	JH
K0161	18/04/2019	10	Kestrel	1	17:32:20	67		67	67		PB4, (Cutover bog) Hunting and Hovering	JH
K0163	18/04/2019	10	Kestrel	1	17:49:04	124		124			PB4, (Cutover bog) Hunting and hovering. Male	JH
K0164	23/04/2019	4	Kestrel	1	15:34:59	58		58			PB4, (Cutover bog) Travelling	JH
K0165	23/04/2019	4	Kestrel	1	16:32:50	213		108	10		PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and Hovering	JH
K0166	25/04/2019	8	Kestrel	1	16:01:25	90		90			PB4, (Cutover bog) hunting	TR
K0167	26/04/2019	6	Kestrel	1	16:48:02	120		30	90		GA1, (Improved agricultural grassland) hunting	TR
K0168	29/04/2019	7	Kestrel	1	16:17:24	10		10			GA1, (Improved agricultural grassland) Perched a potential nest area before raveling on, male	TR
K0169	29/04/2019	7	Kestrel	1	16:30:00	100		60	40		PB4, (Cutover bog) male hunting	TR
K0170	29/04/2019	7	Kestrel	1	18:30:00	90		90			PB4, (Cutover bog) male hunting	TR



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K0171	29/04/2019	7	Kestrel	1	18:30:00	150		120	30		PB4, (Cutover bog) male hunting	TR
K0257	07/05/2019	6	Kestrel	1	07:21:00	147			147		WD4, (Conifer plantation) PB4, (Cutover bog) Hunting and hovering	JK
K0258	07/05/2019	6	Kestrel	1	08:05:00	41		41	42		WD4, (Conifer plantation) PB4, (Cutover bog) Hunting and hovering	JK
K0172	16/05/2019	3	Kestrel	1	05:33:00	80		80			PB4, (Cutover bog) hunting before travelling on	TR
K0259	21/05/2019	7	Kestrel	1	07:40:00	133		133			PB4, (Cutover bog) WN7, (Bog woodland)	JK
K0260	21/05/2019	7	Kestrel	1	07:55:00	64			64		PB4, (Cutover bog) WN7, (Bog woodland)	JK
K0261	21/05/2019	7	Kestrel	1	10:58:00	54		54			PB4, (Cutover bog) WN7, (Bog woodland)	JK
K0262	22/05/2019	5	Kestrel	1	09:12:00	52		52			WN7, (Bog woodland)	JK
K0270	06/06/2019	6	Kestrel	1	15:50:00	42		42			GA1, (Improved agricultural grassland) WN7, (Bog woodland) Travelling	JK
K0263	06/06/2019	6	Kestrel	1	10:44:00	97		97			GA1, (Improved agricultural grassland) WN7, (Bog woodland) Hunting	JK
K0264	06/06/2019	6	Kestrel	1	10:53:00	54		54			GA1, (Improved agricultural grassland) WN7, (Bog woodland) Hunting	JK
K0265	06/06/2019	6	Kestrel	1	11:23:00	44		44			GA1, (Improved agricultural grassland) WN7, (Bog woodland) Hunting	JK
K0266	06/06/2019	6	Kestrel	1	11:48:00	63		63			GA1, (Improved agricultural grassland) WN7, (Bog woodland) Hunting	JK
K0267	06/06/2019	6	Kestrel	1	12:20:00	78		78			GA1, (Improved agricultural grassland) WN7, (Bog woodland) Hunting	JK
K0268	06/06/2019	6	Kestrel	1	13:52:00	51		51			GA1, (Improved agricultural grassland) WN7, (Bog woodland) Hunting	JK



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K0269	06/06/2019	6	Kestrel	1	14:25:00	63		63			GA1, (Improved agricultural grassland) WN7, (Bog woodland) Hunting	JK
K0271	10/06/2019	9	Kestrel	1	13:55:00	75		75			WN7, (Bog woodland) PB4, (Cutover bog) Hunting	JK
K0173	10/06/2019	2	Kestrel	1	13:04:12	46		46			PB4, (Cutover bog) WD4, (Conifer plantation) Landing in WD4	JH
K0272	17/06/2019	7	Kestrel	1	10:50:00	36		36			WN7, (Bog woodland) PB4, (Cutover bog) Travelling	JK
K0273	17/06/2019	7	Kestrel	1	11:19:00	58		58			WN7, (Bog woodland) PB4, (Cutover bog) Hunting	JK
K0274	24/06/2019	5	Kestrel	1	10:44:00	105		105			GA1, (Improved agricultural grassland) WN7, (Bog woodland) Hunting	JK
K0275	25/06/2019	10	Kestrel	1	16:29:00	123			123		PB4, (Cutover bog) Soaring	JK
K0278	25/06/2019	10	Kestrel	1	18:22:00	95		95			PB4, (Cutover bog) Soaring	JK
K0279	25/06/2019	10	Kestrel	1	18:39:00	118			118		PB4, (Cutover bog) Soaring	JK
K0276	25/06/2019	10	Kestrel	1	16:53:00	102		102			PB4, (Cutover bog) Hunting	JK
K0277	25/06/2019	10	Kestrel	1	17:44:00	87		87			PB4, (Cutover bog) Hunting	JK
K0280	25/06/2019	10	Kestrel	1	18:39:00	63		63			PB4, (Cutover bog) Hunting	JK
K0281	27/06/2019	3	Kestrel	1	14:28:00	75		75			WN7, (Bog woodland) PB4, (Cutover bog) Hunting	JK
K0282	27/06/2019	3	Kestrel	1	15:42:00	82		82			WN7, (Bog woodland) PB4, (Cutover bog) Hunting	JK
K0283	27/06/2019	3	Kestrel	1	17:50:00	55		55			WN7, (Bog woodland) PB4, (Cutover bog) Hunting	JK
K0174	08/07/2019	5	Kestrel	1	10:31:04	50			50		GA1, (Improved agricultural grassland) Travelling. Male	JH
K0176	08/07/2019	5	Kestrel	1	15:31:34	68			68		PB4, (Cutover bog) Travelling	JH



Vantage Point Survey												
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K0175	08/07/2019	5	Kestrel	1	12:40:49	195		90	105		PB4, (Cutover bog) Hunting and hovering	JH
K0179	10/07/2019	9	Kestrel	1	10:40:37	139		139			PB4, (Cutover bog) Hunting, hovering and landing in cover	JH
K0177	10/07/2019	9	Kestrel	1	09:16:26	46		46			PB4, (Cutover bog) Hunting, hovering and landing in cover	JH
K0181	10/07/2019	9	Kestrel	1	14:19:01	64		64			PB4, (Cutover bog) Hunting and hovering. Adult Male	JH
K0178	10/07/2019	9	Kestrel	1	09:32:02	60		60			PB4, (Cutover bog) Hunting and hovering	JH
K0180	10/07/2019	9	Kestrel	1	11:58:47	31		31			PB4, (Cutover bog) Hunting and hovering	JH
K0182	10/07/2019	9	Kestrel	1	14:32:27	220		220			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Hunting and hovering	JH
K0183	12/07/2019	2	Kestrel	1	09:14:46	60		60			PB4, (Cutover bog) Travelling. Adult Male.	JH
K0184	12/07/2019	2	Kestrel	1	12:12:24	140		140			PB4, (Cutover bog) Hunting, hovering and landing in cover	JH
K0185	12/07/2019	2	Kestrel	1	14:38:39	42		42			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and hovering	JH
K0187	16/07/2019	8	Kestrel	1	10:45:41	70		70			PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Hunting, hovering and landing in cover. Female	JH
K0188	16/07/2019	8	Kestrel	1	12:47:12	86		86			PB4, (Cutover bog) Hunting, hovering and landing in cover	JH
K0189	16/07/2019	8	Kestrel	2	13:22:44	295		295			PB4, (Cutover bog) Hunting and hovering. male and female	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
K0190	16/07/2019	8	Kestrel	1	14:54:18	48		48			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and hovering	JH
K0186	16/07/2019	8	Kestrel	1	10:04:36	47		47			PB4, (Cutover bog) Female. Hunting and hovering	JH
K0194	18/07/2019	7	Kestrel	1	12:50:40	30		30			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Mobbing BZ	JH
K0195	18/07/2019	7	Kestrel	1	12:55:56	54		54			PB4, (Cutover bog) Male	JH
K0193	18/07/2019	7	Kestrel	1	11:23:33	24		24			PB4, (Cutover bog) Landing in scrub	JH
K0191	18/07/2019	7	Kestrel	1	10:45:58	49		49			PB4, (Cutover bog) Hunting, hovering and landing in scrub	JH
K0196	18/07/2019	7	Kestrel	1	13:06:37	140		140			PB4, (Cutover bog) Hunting, hovering and landing in scrub	JH
K0192	18/07/2019	7	Kestrel	1	11:15:29	80		80			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Hunting, hovering and flying on. Male	JH
K0200	18/07/2019	7	Kestrel	1	14:10:04	354		234	120		PB4, (Cutover bog) Hunting and mobbing BZ	JH
K0199	18/07/2019	7	Kestrel	1	13:52:53	50		50			PB4, (Cutover bog) Hunting and hovering. Male	JH
K0197	18/07/2019	7	Kestrel	1	13:13:38	152			152		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Hunting and hovering	JH
K0198	18/07/2019	7	Kestrel	1	13:40:54	75		20	55		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Hunting and hovering	JH
K0212	22/07/2019	4	Kestrel	1	14:07:26	92		92			PB4, (Cutover bog) Hunting, hovering and landing on PB4	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
K0206	22/07/2019	4	Kestrel	2	10:28:14	54		54			PB4, (Cutover bog) Hunting, hovering and perching on timber pile.	JH
K0205	22/07/2019	4	Kestrel	1	09:59:42	48		48			PB4, (Cutover bog) Hunting, hovering and landing in cover	JH
K0208	22/07/2019	4	Kestrel	1	11:15:42	196		156	40		PB4, (Cutover bog) Hunting, hovering and landing in cover	JH
K0202	22/07/2019	4	Kestrel	2	08:55:05	193		193			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting, hovering and landing in WD4	JH
K0207	22/07/2019	4	Kestrel	1	10:43:41	97		97			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting, hovering and landing in WD4	JH
K0203	22/07/2019	4	Kestrel	1	09:07:50	61		61			PB4, (Cutover bog) Hunting and hovering	JH
K0204	22/07/2019	4	Kestrel	1	09:51:08	151		151			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and hovering	JH
K0209	22/07/2019	4	Kestrel	1	12:26:45	50		50			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and hovering	JH
K0210	22/07/2019	4	Kestrel	1	12:32:37	140		50	90		PB4, (Cutover bog) Hunting and hovering	JH
K0211	22/07/2019	4	Kestrel	2	12:57:18	200		200			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and hovering	JH
K0220	22/07/2019	4	Kestrel	1	14:34:33	67		67			PB4, (Cutover bog) Hunting and hovering	JH
K0213	22/07/2019	4	Kestrel	1	15:26:56	46		46			PB4, (Cutover bog) Hunting and hovering	JH
K0201	22/07/2019	4	Kestrel	1	08:48:09	230		230			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and hovering	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
K0219	24/07/2019	3	Kestrel	1	12:46:43	30		30			PB4, (Cutover bog) Hunting, hovering and landing on wire of wind mast	JH
K0216	24/07/2019	3	Kestrel	1	10:51:50	176		176			PB4, (Cutover bog) Hunting, hovering and landing in cover. Male	JH
K0214	24/07/2019	3	Kestrel	1	10:25:53	195		121	74		PB4, (Cutover bog) Hunting and hovering. Male	JH
K0215	24/07/2019	3	Kestrel	1	10:39:13	170		170			PB4, (Cutover bog) Hunting and hovering . Male	JH
K0217	24/07/2019	3	Kestrel	1	11:10:01	52		52			PB4, (Cutover bog) Hunting and hovering	JH
K0218	24/07/2019	3	Kestrel	1	11:20:26	160			160		PB4, (Cutover bog) Hunting and hovering	JH
K0284	30/07/2019	10	Kestrel	1	11:16:00	112		112			PB4, (Cutover bog) WN7, (Bog woodland) Hunting and hovering	JK
K0285	30/07/2019	10	Kestrel	1	12:20:00	87			87		PB4, (Cutover bog) WN7, (Bog woodland) Hunting and hovering	JK
K0286	30/07/2019	10	Kestrel	1	13:48:00	164			164		PB4, (Cutover bog) WN7, (Bog woodland) Hunting and hovering	JK
K0287	30/07/2019	10	Kestrel	3	16:11:00	128			128		PB4, (Cutover bog) WN7, (Bog woodland) Hunting and hovering	JK
K0288	30/07/2019	10	Kestrel	2	17:21:00	95		95			PB4, (Cutover bog) WN7, (Bog woodland) Hunting and hovering	JK
K0224	01/08/2019	7	Kestrel	1	18:39:56	25		25			PB4, (Cutover bog) Landing in scrub. Male	JH
K0222	01/08/2019	7	Kestrel	1	17:05:01	47		47			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Hunting. Juvenile birds calling from cover onsite.	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
K0221	01/08/2019	7	Kestrel	1	16:38:36	288		120	168		PB4, (Cutover bog) Hunting and hovering. Male	JH
K0223	01/08/2019	7	Kestrel	1	17:12:22	110		110			PB4, (Cutover bog) Hunting and hovering	JH
K0225	02/08/2019	5	Kestrel	1	10:12:20	240			240		PB4, (Cutover bog) Hunting and hovering	JH
K0226	02/08/2019	5	Kestrel	1	10:23:09	170		170			PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) WD4, (Conifer plantation) Carrying prey item. Landing in WD4	JH
K0227	02/08/2019	6	Kestrel	1	12:40:27	35		35			PB4, (Cutover bog) Landing in scrub	JH
K0228	02/08/2019	6	Kestrel	1	13:37:33	140		140			PB4, (Cutover bog) Hunting and hovering	JH
K0229	06/08/2019	5	Kestrel	1	20:48:25	45		45			PB4, (Cutover bog) Hunting and hovering. Male	JH
K0251	06/08/2019	4	Kestrel	1	17:56:50	490		15	350		PB4, (Cutover bog) hunting	TR
K0231	07/08/2019	8	Kestrel	1	16:23:56	56		56			PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) WD4, (Conifer plantation) Travelling	JH
K0233	07/08/2019	8	Kestrel	1	18:15:05	81		81			PB4, (Cutover bog) Hunting, hovering and landing in cover	JH
K0236	07/08/2019	8	Kestrel	1	19:51:06	212		212			PB4, (Cutover bog) Hunting and hovering. Male	JH
K0235	07/08/2019	8	Kestrel	1	19:34:56	316		140	176		PB4, (Cutover bog) Hunting and hovering. Male	JH
K0230	07/08/2019	8	Kestrel	1	16:00:40	103		103			PB4, (Cutover bog) Hunting and hovering	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
K0234	07/08/2019	8	Kestrel	1	18:23:40	218		119	99		PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and hovering	JH
K0232	07/08/2019	9	Kestrel	1	17:38:22	377		377			PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Hunting and hovering. Male	JH
K0240	08/08/2019	9	Kestrel	1	16:47:02	50		50			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Travelling. Male	JH
K0245	08/08/2019	9	Kestrel	2	17:25:28	140		140			PB4, (Cutover bog) Landing in cover	JH
K0237	08/08/2019	9	Kestrel	1	15:48:16	135		135			PB4, (Cutover bog) Hunting and hovering. Male	JH
K0241	08/08/2019	9	Kestrel	1	16:55:34	125		125			PB4, (Cutover bog) Hunting and hovering.	JH
K0238	08/08/2019	9	Kestrel	1	16:37:00	156		156			PB4, (Cutover bog) Hunting and hovering	JH
K0239	08/08/2019	9	Kestrel	1	16:42:13	100		100			PB4, (Cutover bog) Hunting and hovering	JH
K0242	08/08/2019	9	Kestrel	1	17:09:13	136		136			PB4, (Cutover bog) Hunting and hovering	JH
K0243	08/08/2019	9	Kestrel	1	17:18:52	226		226			PB4, (Cutover bog) Hunting and hovering	JH
K0244	08/08/2019	9	Kestrel	1	17:39:10	454		454			PB4, (Cutover bog) Hunting and hovering	JH
K0248	12/08/2019	10	Kestrel	1	18:59:18	158		158			PB4, (Cutover bog) Hunting, hovering and landing in scrub.	JH
K0249	12/08/2019	10	Kestrel	1	19:03:28	69		69			PB4, (Cutover bog) Hunting, hovering and landing in scrub	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
K0246	12/08/2019	10	Kestrel	1	18:44:32	40		40			PB4, (Cutover bog) Hunting and hovering	JH
K0247	12/08/2019	10	Kestrel	1	18:45:46	127		127			PB4, (Cutover bog) Hunting and hovering	JH
K0250	12/08/2019	10	Kestrel	1	19:16:36	332		332			PB4, (Cutover bog) Hunting and hovering	JH
K0252	27/08/2019	2	Kestrel	1	18:57:13	260		130	130		GA1, (Improved agricultural grassland) hunting	TR
K0253	27/08/2019	2	Kestrel	1	19:20:24	650		600	50		Hunting	TR
K0255	29/08/2019	4	Kestrel	1	19:58:16	70			70		PB4, (Cutover bog) travelling	TR
K0254	29/08/2019	4	Kestrel	1	19:30:12	65		55			PB4, (Cutover bog) hunting	TR
K0290	04/09/2019	6	Kestrel	1	10:07:36	67		67			GA1, (Improved agricultural grassland) Hunting; hovering and landing in hedgerow. Female	JH
K0289	04/09/2019	6	Kestrel	1	07:29:12	53		53			GA1, (Improved agricultural grassland) Hunting and hovering	JH
K0291	04/09/2019	6	Kestrel	1	11:42:17	60		60			GA1, (Improved agricultural grassland) Hunting and hovering	JH
K0292	06/09/2019	5	Kestrel	1	10:18:36	124		124			PB4, (Cutover bog) Hunting and hovering	JH
K0295	10/09/2019	4	Kestrel	1	11:24:33	58		58			PB4, (Cutover bog) Landing in scrub	JH
K0294	10/09/2019	4	Kestrel	1	07:49:48	520			520		PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and hovering. Male	JH
K0293	10/09/2019	4	Kestrel	1	07:48:07	127		93	34		PB4, (Cutover bog) Hunting and hovering	JH
K0299	11/09/2019	7	Kestrel	1	11:49:39	492		192			PB4, (Cutover bog) Hunting and hovering. Male	JH



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
K0297	11/09/2019	7	Kestrel	1	11:05:04	290		290			PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and hovering	JH
K0298	11/09/2019	7	Kestrel	1	11:33:24	169		169			PB4, (Cutover bog) Hunting and hovering	JH
K0300	11/09/2019	7	Kestrel	1	12:18:20	51		51			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Hunting and hovering	JH
K0296	11/09/2019	7	Kestrel	1	08:24:17	40		40			PB4, (Cutover bog) GA1, (Improved agricultural grassland) Being mobbed by HC	JH
K0302	13/09/2019	8	Kestrel	2	10:48:40	211			211		PB4, (Cutover bog) WD4, (Conifer plantation) Spiralling flight	JH
K0303	13/09/2019	8	Kestrel	1	11:34:15	283			283		PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and hovering	JH
K0301	13/09/2019	9	Kestrel	1	07:03:53	266		10	256		PB4, (Cutover bog) Hunting and hovering	JH
K0256	13/09/2019	3	Kestrel	1	11:49:35	50		10	40		PB4, (Cutover bog) travelling	TR
K0304	17/09/2019	10	Kestrel	1	10:39:55	30		30			PB4, (Cutover bog) Landing in scrub	JH
K0305	17/09/2019	10	Kestrel	1	11:10:40	52		52	8		PB4, (Cutover bog) GA1, (Improved agricultural grassland) Hunting and hovering	JH



Vantage Point Survey – Non-Flight Observations							
Map Ref. No.	Date	VP	Species	No. of Birds	Time	Comments	Surveyor
N/A	19/10/2017	10	Kestrel	1	08:01:00	Perched on peat ridge	BM
N/A	12/12/2017	7	Kestrel	1	08:50:00	Perched off to the SW of VP	SON
N/A	08/01/2018	6	Kestrel	1	14:41:00	Perched N of the site.	SON
N/A	10/01/2018	7	Kestrel	1	12:31:00	Calling off site to the east	SON
	12/01/2018	10	Kestrel	1	15:33:00	Male perched on peat ridge	BM
	05/02/2018	7	Kestrel	1	14:03:00	Perched in scrub to the N of VP.	SON
	06/03/2018	6	Kestrel	1	15:13:00	Perched in tree off site to SE of VP.	SON
N/A	02/08/2019	5	Kestrel	1		Perched on telegraph pole at Stonestown	JH

Breeding Bird Survey							
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity	Comments	Surveyor
K001	06/04/2018		Kestrel	1	PB4, (Cutover bog) WD4, (Conifer plantation) Travelling easterly in direction. Male		JH
K002	06/04/2018		Kestrel	1	GA1, (Improved agricultural grassland) Hunting and hovering		JH
K003	06/04/2018		Kestrel	1	PB4, (Cutover bog) Travelling in an easterly direction		JH
K004	17/04/2018		Kestrel	1	PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and hovering. Male		JH
K005	17/04/2018		Kestrel	1	PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and flying on		JH
K006	17/04/2018		Kestrel	1	PB4, (Cutover bog) WD4, (Conifer plantation) Travelling		JH
K007	01/05/2018		Kestrel	1	PB4, (Cutover bog) Hunting and hovering	Male	JH



Breeding Bird Survey							
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity	Comments	Surveyor
K008	02/05/2018		Kestrel	1	GA1, (Improved agricultural grassland) Hunting	Male - in height band 2 for 26 seconds	JH
K009	04/05/2018		Kestrel	1	PB4, (Cutover bog) Hunting and hovering	In flight band 2 for 56 seconds	JH
K010	14/05/2018		Kestrel	1	PB4, (Cutover bog) FW4, (Drainage ditches) Hunting and hovering		JH
K011	05/04/2019	10:21:57	Kestrel	1	PB4, (Cutover bog) Hunting and Hovering		JH
K012	12/04/2019	11:02:03	Kestrel	1	PB4, (Cutover bog) Hu ting and Hovering		JH
K013	13/06/2019	14:06:52	Kestrel	1	PB4, (Cutover bog) Hunting and hovering		JH
K014	19/06/2019	12:33:11	Kestrel	1	GA1, (Improved agricultural grassland) Hunting and hovering		JH
K015	05/07/2019	09:51:18	Kestrel	1	PB4, (Cutover bog) GA1, (Improved agricultural grassland)		JH
K016	09/07/2019	09:13:49	Kestrel	1	PB4, (Cutover bog) Making kill and carrying food parcel.		JH
K017	11/07/2019	14:50:07	Kestrel	1	PB4, (Cutover bog) GA1, (Improved agricultural grassland)		JH
K018	15/07/2019	09:05:15	Kestrel	5	PB4, (Cutover bog) Parents and fledglings		JH
K019	15/07/2019	13:36:19	Kestrel	1	PB4, (Cutover bog) GA1, (Improved agricultural grassland) Female		JH
K020	17/07/2019	09:38:52	Kestrel	1	PB4, (Cutover bog) Male		JH
K021	25/07/2019	10:09:45	Kestrel	1	PB4, (Cutover bog) Male		JH
K022	25/07/2019	10:38:31	Kestrel	1	PB4, (Cutover bog) Male		JH
K023	25/07/2019	13:37:55	Kestrel	1	PB4, (Cutover bog) WD4, (Conifer plantation)		JH



Breeding Raptor Survey							
Map Ref.	Date	Species	No. of Birds	Time of flight	Duration of flight (s)	Notes on habitat and activity	Surveyor
K001	03/04/2018	Kestrel	1	13:05:00		Hunting and hovering	JH
K002	04/04/2018	Kestrel	1	10:35:00		Hunting and hovering	JH
K003	04/04/2018	Kestrel	1	11:18:00		Hunting and hovering	JH
K004	04/04/2018	Kestrel	1	11:56:00		Hunting and gliding	JH
K005	05/04/2018	Kestrel	1	10:28:00		Hunting and hovering	JH
K006	05/04/2018	Kestrel	2	10:54:00		Hunting and hovering. Two males	JH
K007	05/04/2018	Kestrel	1	11:04:00		Hunting and hovering	JH
K008	05/04/2018	Kestrel	1	11:10:00		Hunting and hovering	JH
K009	09/05/2018	Kestrel	1			hunting and hovering	JH
K010	09/05/2018	Kestrel	1			hunting and hovering	JH
K011	16/05/2018	Kestrel	1	11:14:00		hunting and hovering	JH
N/A	26/06/2018	Kestrel	1			G, (Grassland and marsh) WS, (Scrub/ transitional woodland) perched on pylon for c.1 minute	P Troake
K012	27/06/2018	Kestrel	1	08:30:00	10	Flying, brief views	P Troake
K013	10/07/2018	Kestrel	1	09:22:00	40	GA1, (Improved agricultural grassland) male, perched on pylons, 2 flights between pylons	P Troake
N/A	10/07/2018	Kestrel	1	12:24:00		Perched in conifers by bungalow	P Troake
K014	02/04/2019	Kestrel	1	15:08:55		Female	JH
K015	25/04/2019	Kestrel	1	11:33:19		PB4, (Cutover bog) Female	JH
K016	02/05/2019	Kestrel	1	13:25:00	64	PB4, (Cutover bog) WN7, (Bog woodland) Hunting	JK
K017	02/05/2019	Kestrel	1	13:50:00	112	PB4, (Cutover bog) WN7, (Bog woodland) Hunting	JK
K018	30/05/2019	Kestrel	1	15:35:00	211	WN7, (Bog woodland)	JK
K019	04/07/2019	Kestrel	1	09:25		GA1, (Improved agricultural grassland) WD4, (Conifer plantation) Travelling	JH
K020	04/07/2019	Kestrel	1	14:25		GA1, (Improved agricultural grassland) WD4, (Conifer plantation) Travelling	JH
K021	26/07/2019	Kestrel	1	11:50:40		PB4, (Cutover bog) WD4, (Conifer plantation) Hunting and hovering	JH

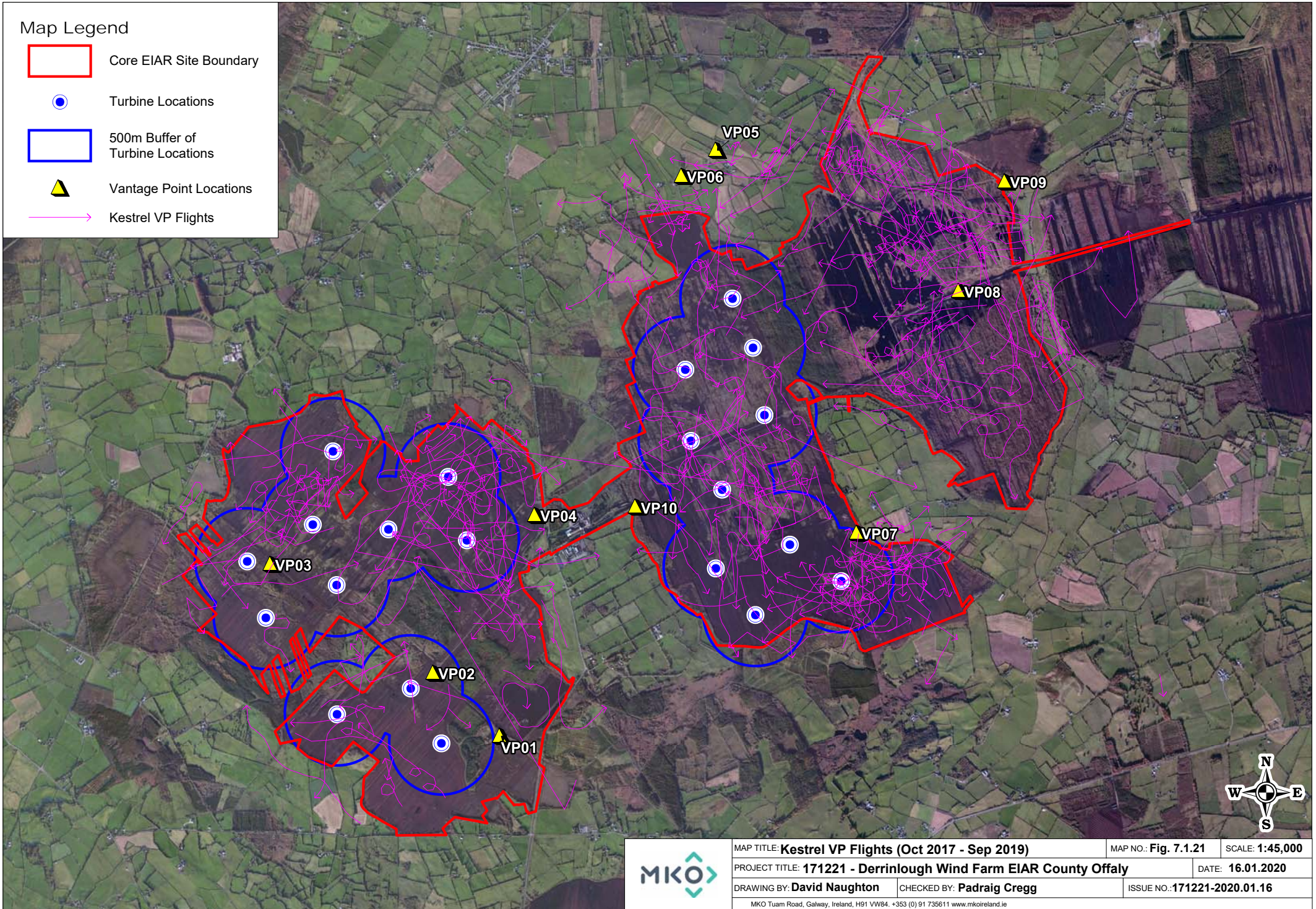


Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
K001	03/10/2018	09:40:00	Kestrel	1		Male Travelling	JH
K002	03/10/2018	10:56:00	Kestrel	1		Hunting and landing in GA1	JH
K003	08/10/2018		Kestrel	1		Male K hunting over PB4, WS1 in height band 1 for 24 seconds	JH
K004	08/11/2018	10:15:00	Kestrel	1		Female travelling overhead	JH
K005	06/12/2018	15:10:00	Kestrel	1		Male hunting and flying away	JH
K006	17/12/2018	10:17:00	Kestrel	1		PB4, (Cutover bog) Travelling overhead	JH
K007	17/12/2018	12:37:00	Kestrel	1		PB4, (Cutover bog) Travelling overhead	JH
K008	17/12/2018	12:55:00	Kestrel	1		PB4, (Cutover bog) WS1, (Scrub) Male hunting and hovering	JH
K009	28/01/2019		Kestrel	1			JH
K010	14/03/2019		Kestrel	1			JH
K011	14/03/2019		Kestrel	1			JH
K012	28/03/2019		Kestrel	1			JH

Incidental Observations						
Date	Survey Type	Location	Species	No. of Birds	Notes	Surveyor
10/01/2019	HH Roost Survey	PB 4 close to HH VP 1	Kestrel	1	Hunting and Hovering	JH
11/12/2018	HH Roost Survey	HHVP5	Kestrel	1		PM
21/12/2018	HH Roost Survey	HHVP1	Kestrel	1		PM
26/09/2019	Commuting/ Migratory VP	CMVP3	Kestrel	1	Hunting and hovering. Male	JH
09/05/2019	Commuting/ Migratory VP	CMVP6	Kestrel	1	Hunting and hovering. Female	JH
12/04/2019	Commuting/ Migratory VP	CMVP6	Kestrel	1	Hunting	JK

Map Legend

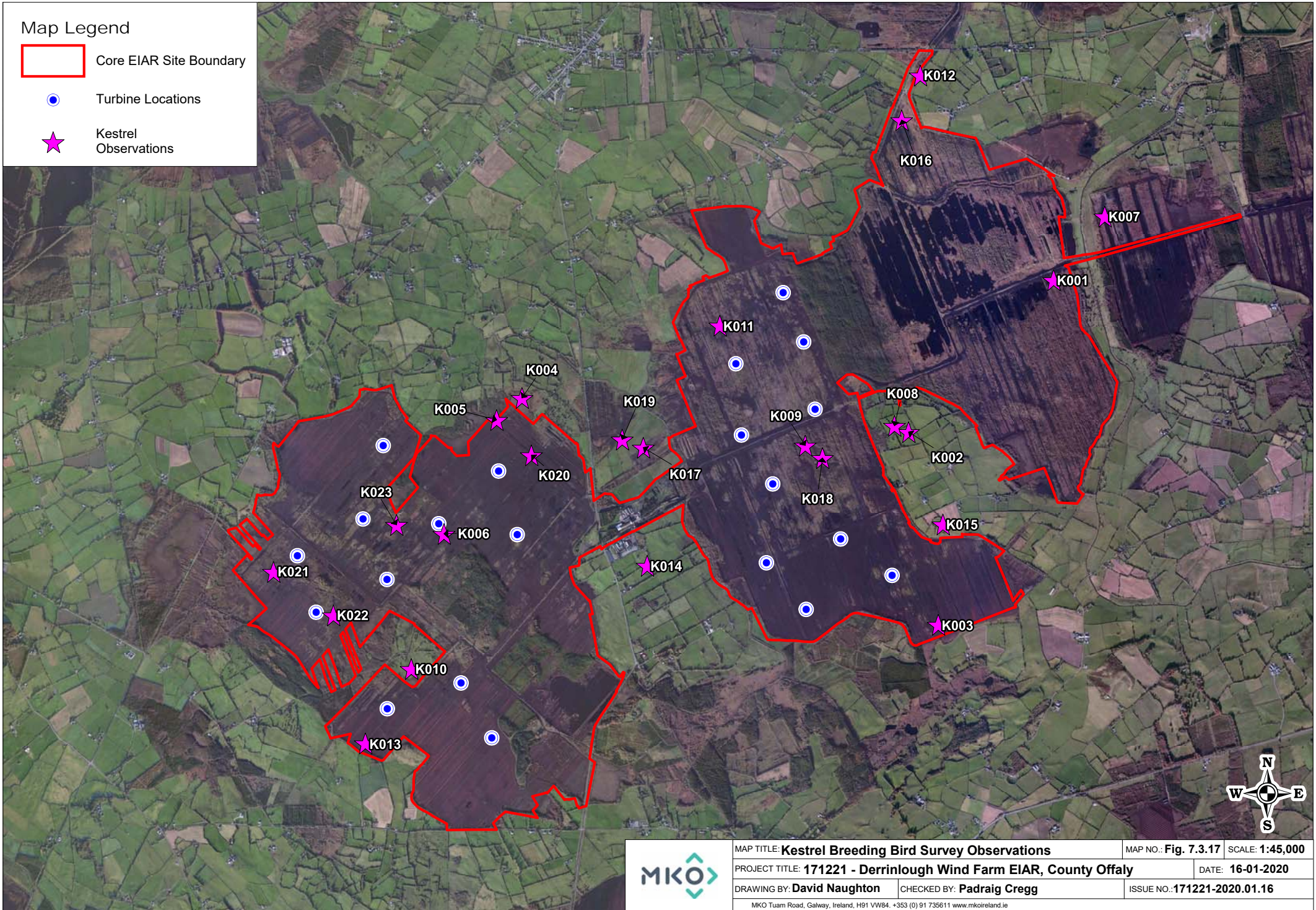
- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ Vantage Point Locations
- Kestrel VP Flights



	MAP TITLE: Kestrel VP Flights (Oct 2017 - Sep 2019)		MAP NO.: Fig. 7.1.21	SCALE: 1:45,000
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR County Offaly			DATE: 16.01.2020
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.16
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie			







Map Legend

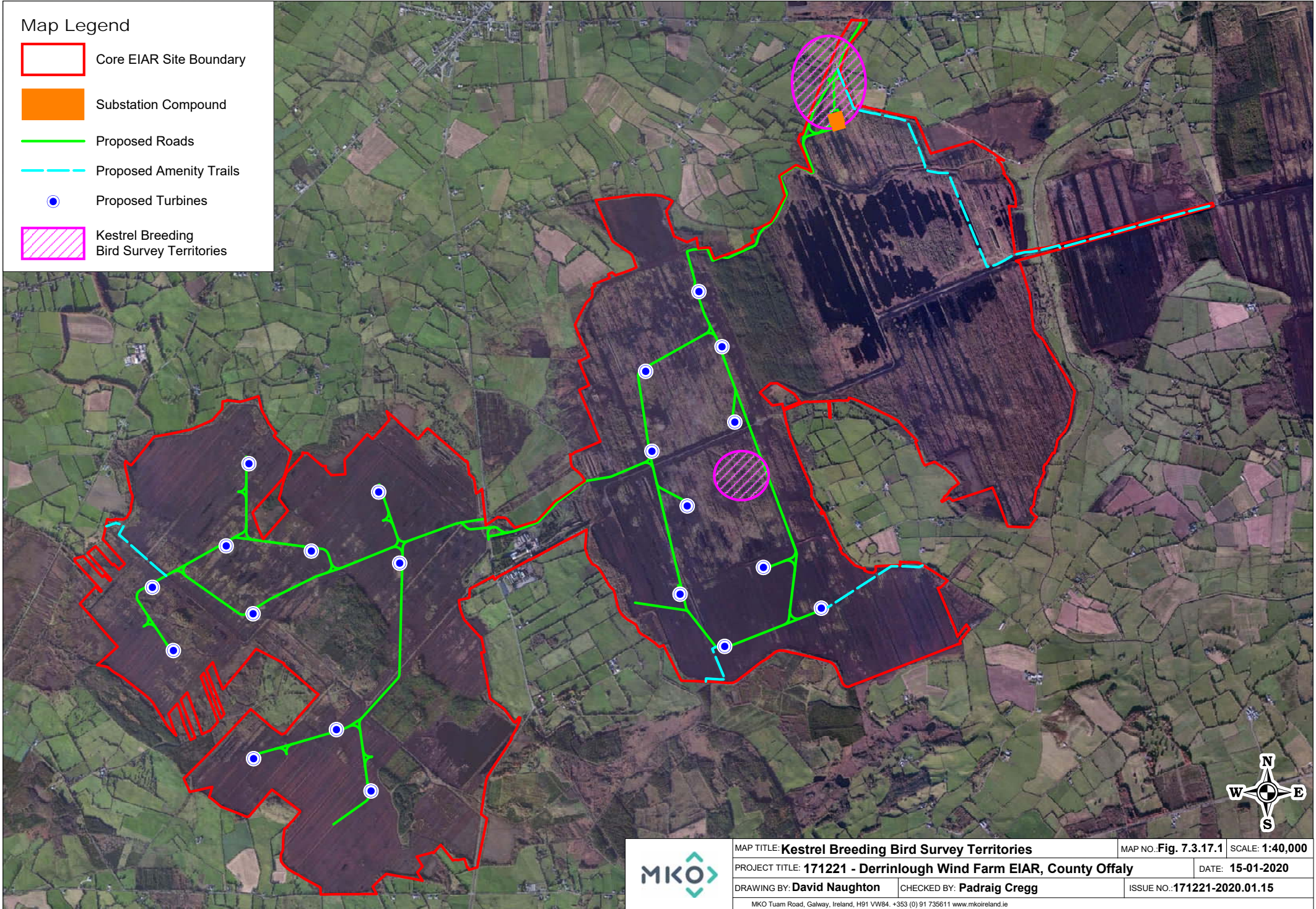
- Core EIAR Site Boundary
- Turbine Locations
- ★ Kestrel Observations



	MAP TITLE: Kestrel Breeding Bird Survey Observations	MAP NO.: Fig. 7.3.17	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly		DATE: 16-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16	
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie			

Map Legend

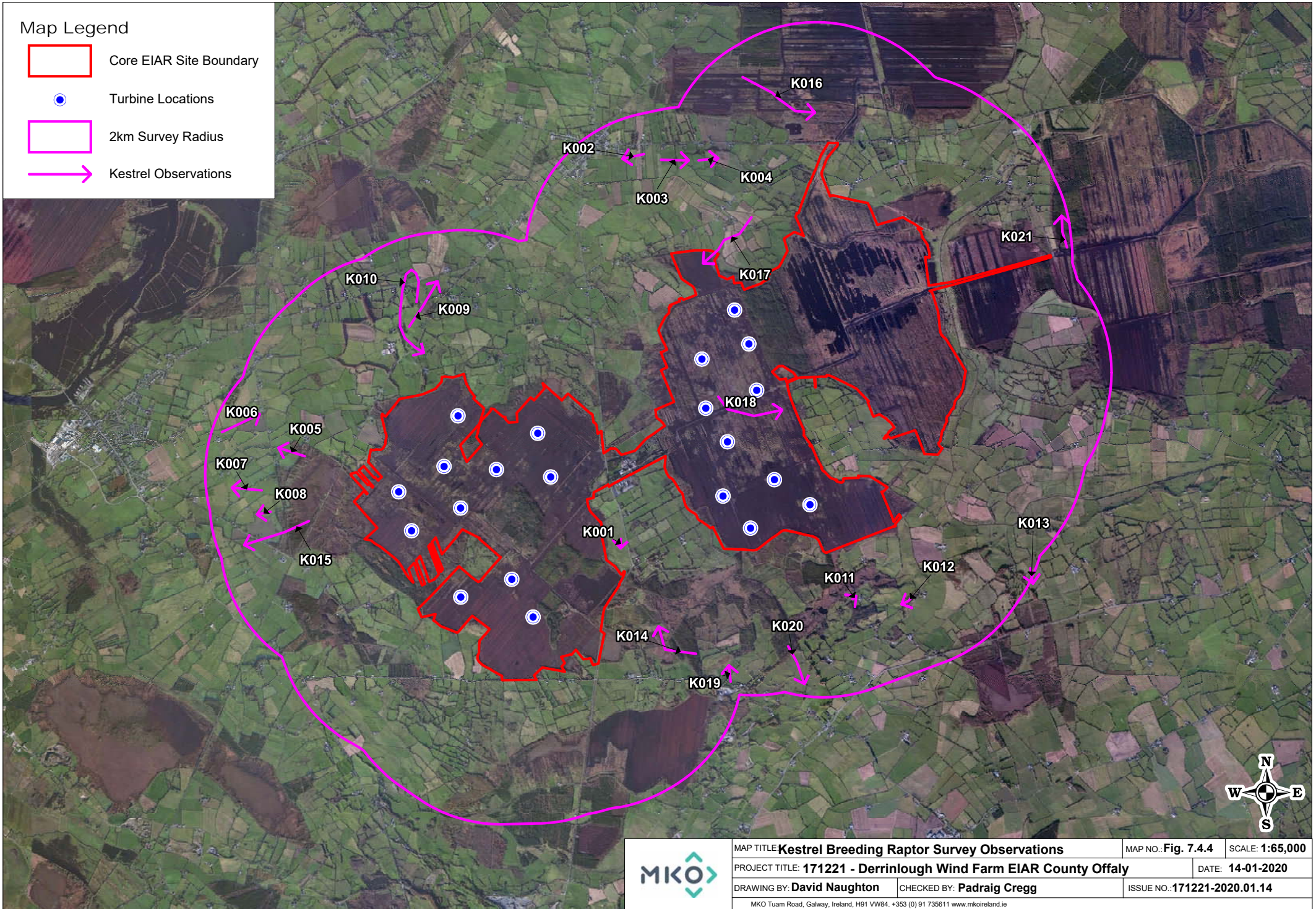
-  Core EIAR Site Boundary
-  Substation Compound
-  Proposed Roads
-  Proposed Amenity Trails
-  Proposed Turbines
-  Kestrel Breeding Bird Survey Territories



	MAP TITLE: Kestrel Breeding Bird Survey Territories	MAP NO.: Fig. 7.3.17.1	SCALE: 1:40,000
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly	DATE: 15-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.15
	<small>MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie</small>		

Map Legend

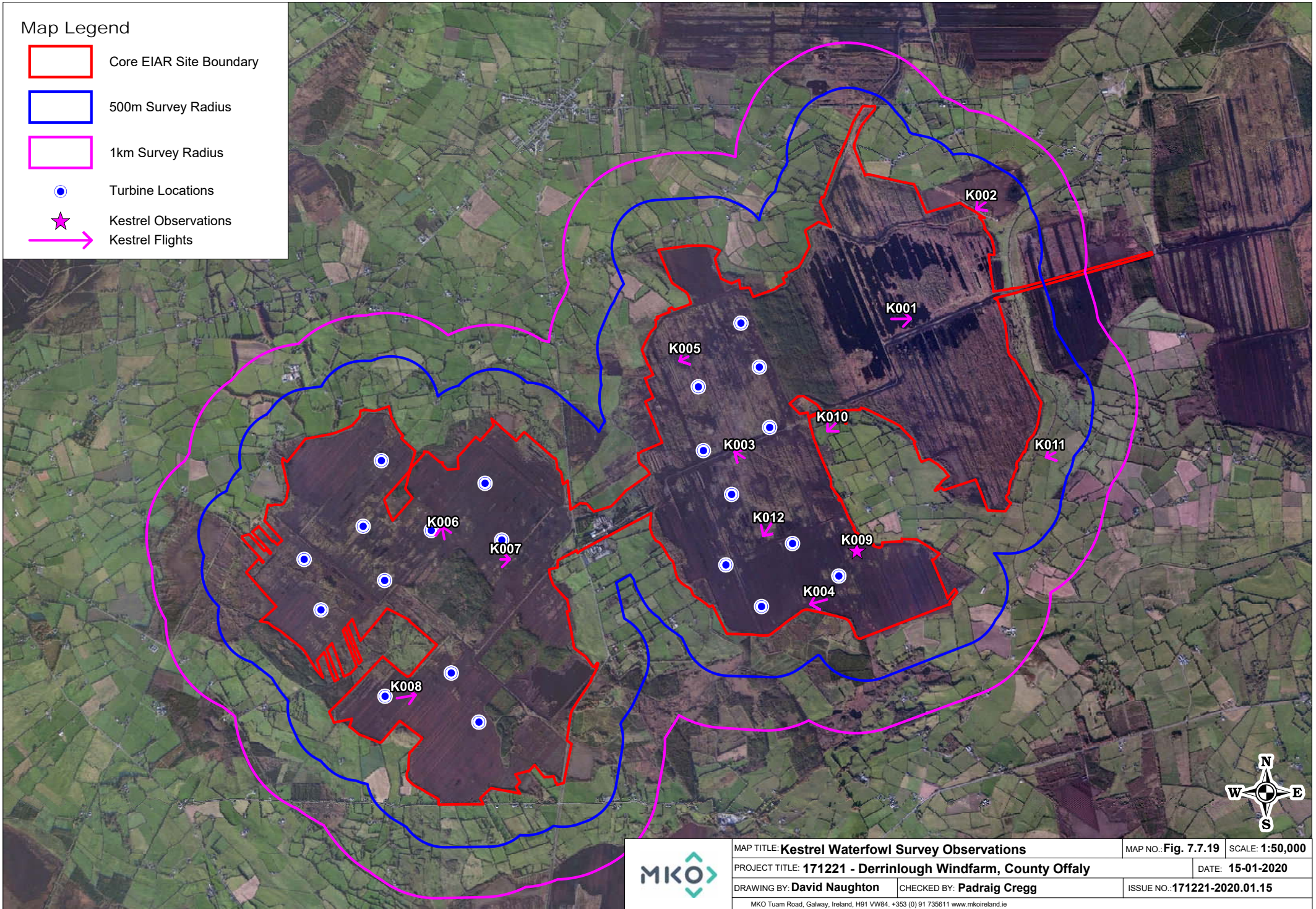
- Core EIAR Site Boundary
- Turbine Locations
- 2km Survey Radius
- ➔ Kestrel Observations



	MAP TITLE: Kestrel Breeding Raptor Survey Observations		MAP NO.: Fig. 7.4.4	SCALE: 1:65,000
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR County Offaly			DATE: 14-01-2020
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg	
	ISSUE NO.: 171221-2020.01.14			
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Map Legend

- Core EIAR Site Boundary
- 500m Survey Radius
- 1km Survey Radius
- Turbine Locations
- ★ Kestrel Observations
- Kestrel Flights



	MAP TITLE: Kestrel Waterfowl Survey Observations		MAP NO.: Fig. 7.7.19	SCALE: 1:50,000	
	PROJECT TITLE: 171221 - Derrinlough Windfarm, County Offaly			DATE: 15-01-2020	
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.15
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Table 24 Snipe Survey Data

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
N/A	08/01/2018	6	Snipe	1	12:00:00	15		8	7		Flew over VP from NW- SE off site	SON
SN0001	23/05/2018	8	Snipe	1	20:28:00	125			125		PB4, (Cutover bog) Displaying / Drumming	JH
SN0002	23/05/2018	8	Snipe	2	20:50:00	73			73		PB4, (Cutover bog) Displaying / Chipping and Drumming	JH
SN0004	31/05/2018	4	Snipe	3	20:10:00	112	4	8	100		PB4, (Cutover bog) Displaying - Chipping and Drumming	JH
SN0005	31/05/2018	4	Snipe	2	20:43:00	38	10	28			PB4, (Cutover bog) Displaying	JH
SN0006	31/05/2018	4	Snipe	2	20:52:00	101	6	15	80		PB4, (Cutover bog) Displaying	JH
SN0003	31/05/2018	4	Snipe	1	20:07:00	44			44		PB4, (Cutover bog) Display Flight	JH
SN0007	11/06/2018	7	Snipe	2	10:05:00	23		23			PB4, (Cutover bog) Flying and Calling	JH
SN0009	14/06/2018	9	Snipe	1	11:59:00	28	28				PB4, (Cutover bog) Travelling	JH
SN0008	14/06/2018	9	Snipe	1	09:14:00	16	16				PB4, (Cutover bog) Chipping Snipe	JH
SN0010	18/06/2018	8	Snipe	4	08:59:00	70		70			PB4, (Cutover bog) Chipping - Displaying Snipe	JH
SN0011	18/06/2018	8	Snipe	5	14:45:00	90	35	55			PB4, (Cutover bog) Chipping - Displaying Snipe	JH
SN0012	01/08/2018	1	Snipe	2	10:48:00	24		24			PB4, (Cutover bog) Travelling	JH
SN0013	14/09/2018	8	Snipe	6	08:13:00	39	15	24			PB4, (Cutover bog) Travelling	JH
SN0014	14/09/2018	8	Snipe	1	10:26:00	56	10	46			PB4, (Cutover bog) Landing on PB4	JH
SN0015	11/10/2018	6	Snipe	1	18:10:00	20	10	10			GA1, (Improved agricultural grassland)	TR
SN0016	11/10/2018	6	Snipe	2	18:14:00	30	5	25			GA1, (Improved agricultural grassland)	TR
SN0017	12/10/2018	7	Snipe	4	15:00:00	200		100	100		PB4, (Cutover bog) travelling	TR



Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
SN0019	16/10/2018	8	Snipe	1	17:28:00	5	5				PB4, (Cutover bog) travelling and landing	TR
SN0018	16/10/2018	8	Snipe	2	14:23:00	15	15				PB4, (Cutover bog) travelling	TR
SN0020	16/10/2018	8	Snipe	1	18:13:00	50			50		PB4, (Cutover bog) travelling	TR
SN0021	17/10/2018	9	Snipe	1	19:10:00	5	5				PB4, (Cutover bog) travelling	TR
SN0022	12/02/2019	3	Snipe	3	13:59:00	24	24				PB4, (Cutover bog) Travelling	JH
SN0023	18/04/2019	10	Snipe	2	20:05:57	24		24			PB4, (Cutover bog) Flying and Calling	JH
SN0024	23/04/2019	9	Snipe	1	16:52:08	5					PB4, (Cutover bog) landing	TR
SN0025	25/04/2019	8	Snipe	3	20:33:20	12					PB4, (Cutover bog) rising from wetland, travelling	TR
SN0026	25/04/2019	8	Snipe	17	20:35:00	330		20	100		PB4, (Cutover bog) circling over wetland, high up, calling	TR
SN0027	21/05/2019	4	Snipe	2	06:53:15	50			50		PB4, (Cutover bog) travelling	TR
SN0028	10/07/2019	9	Snipe		09:29:10	30		30			PB4, (Cutover bog) Travelling	JH

Vantage Point Survey – Non-Flight Observation							
Map Ref. No.	Date	VP	Species	No. of Birds	Time	Comments	Surveyor
N/A	10/10/2017	6	Snipe		06:49:00	Heard calling to the N of site	SON
N/A	09/01/2018	6	Snipe		07:47:00	Heard calling from S of VP2. Off site	SON
N/A	09/02/2018	7	Snipe	1	11:50:00	Calling from scrub to the south west.	SON
N/A	03/05/2018	9	Snipe	1	21:30:00	Calling on site - no visual - too dark	JH



Vantage Point Survey – Non-Flight Observation							
Map Ref. No.	Date	VP	Species	No. of Birds	Time	Comments	Surveyor
N/A	03/05/2018	9	Snipe	1	21:42:00	Calling on site - no visual - too dark	JH
N/A	12/02/2019	3	Snipe	1		Calling - no visual -too dark	JH
N/A	12/02/2019	3	Snipe	1		Calling - no visual -too dark	JH
N/A	12/02/2019	3	Snipe	1		Calling- no visual - too dark	JH
N/A	15/03/2019	3	Snipe	1	06:01:00	Chipping Snipe - No Visual	JH
N/A	11/04/2019	2	Snipe	1	20:56:00	Drumming and Chipping SN. No visual	JH
N/A	16/04/2019	3	Snipe	1	21:12:00	Drumming snipe. No visual.	JH
N/A	23/04/2019	4	Snipe	1	21:13:00	Chipping Snipe. No visual.	JH
N/A	09/08/2019	9	Snipe	1		Chipping. No visual too dark	JH

Breeding Bird Survey							
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity	Comments	Surveyor
SN001	06/04/2018		Snipe	1	PB4, (Cutover bog) Flying	Flushed by observer	JH
SN002	06/04/2018		Snipe	1	PB4, (Cutover bog) Flying	Flushed by observer	JH
SN003	06/04/2018		Snipe	4	PB4, (Cutover bog) Flying	Flushed by observer	JH
SN004	06/04/2018		Snipe	1	PB4, (Cutover bog) Flying	Flushed by observer	JH
SN005	06/04/2018		Snipe	1	PB4, (Cutover bog) Flying	Flushed by observer	JH
SN006	09/04/2018		Snipe	1	PB4, (Cutover bog) Flying	Flushed by observer	JH
SN007	09/04/2018		Snipe	1	PB4, (Cutover bog) Flying	Flushed by observer	JH
SN008	09/04/2018		Snipe	1	PB4, (Cutover bog) Flying	Flushed by observer	JH



Breeding Bird Survey							
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity	Comments	Surveyor
SN009	09/04/2018		Snipe	1	PB4, (Cutover bog) Flying	Flushed by observer	JH
SN010	09/04/2018		Snipe	1	PB4, (Cutover bog) Flying	Flushed by observer	JH
SN011	12/04/2018		Snipe	1	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Flying	Flushed by observer	JH
SN012	12/04/2018		Snipe	1	PB4, (Cutover bog) Flying	Flushed by observer	JH
SN013	16/04/2018		Snipe	1	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Flying	Flushed by observer	JH
SN014	16/04/2018		Snipe	1	PB4, (Cutover bog) Flying	Flushed by observer	JH
SN015	16/04/2018		Snipe	2	PB4, (Cutover bog) Flying	Flushed by observer	JH
SN016	16/04/2018		Snipe	1	PB4, (Cutover bog) Flying	Flushed by observer	JH
SN017	17/04/2018		Snipe	1	PB4, (Cutover bog) Flying	Flushed by observer	JH
SN018	17/04/2018		Snipe	1	PB4, (Cutover bog) Flying	Flushed by observer	JH
SN019	17/04/2018		Snipe	1	PB4, (Cutover bog) Flying	Flushed by observer	JH
SN020	20/04/2018		Snipe	1	PB4, (Cutover bog) Flying	Flushed by observer	JH
SN021	20/04/2018		Snipe	2	PB4, (Cutover bog) Flying	Flushed by observer	JH
SN022	01/05/2018		Snipe	1	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Chipping	Chipping snipe on wet area of PB4	JH
SN023	04/05/2018		Snipe	2	PB4, (Cutover bog) Flying	Flushed by observer	JH
SN024	04/05/2018		Snipe	1	PB4, (Cutover bog) Flying	Flushed by observer	JH
SN025	18/05/2018		Snipe	1	PB4, (Cutover bog) Chipping	Chipping Snipe	JH
SN026	22/05/2018		Snipe	2	PB4, (Cutover bog) Drumming and chipping	Drumming and Chipping	JH
SN027	24/05/2018		Snipe	1	PB4, (Cutover bog) Chipping	Chipping Snipe	JH
SN028	06/06/2018	06:09:00	Snipe	1	Chipping Snipe heard		JH
SN029	06/06/2018	07:19:00	Snipe	1	Chipping Snipe heard		JH
SN030	06/06/2018	09:08:00	Snipe	1	Chipping Snipe heard		JH
SN031	08/06/2018	06:08:00	Snipe	1	Displaying drumming and chipping		JH



Breeding Bird Survey							
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity	Comments	Surveyor
SN032	08/06/2018	06:29:00	Snipe	2	Chipping snipe		JH
SN033	08/06/2018	06:38:00	Snipe	3	Chipping snipe		JH
SN034	08/06/2018	07:34:00	Snipe	1	Drumming snipe		JH
SN035	13/06/2018	08:34:00	Snipe	1	Chipping snipe		JH
SN036	15/06/2018	06:26:00	Snipe	1	Drumming and chipping		JH
SN037	15/06/2018	07:42:00	Snipe	1	Drumming		JH
SN038	15/06/2018	08:57:00	Snipe	1	Displaying Snipe		JH
SN039	19/06/2018	06:27:00	Snipe	1	Drumming and chipping		JH
SN040	19/06/2018	06:49:00	Snipe	1	Drumming and chipping		JH
SN041	19/06/2018	06:58:00	Snipe	1	Chipping		JH
SN042	19/06/2018	07:10:00	Snipe	1	Drumming		JH
SN043	19/06/2018	08:20:00	Snipe	1	Chipping		JH
SN044	21/06/2018	06:32:00	Snipe	2	Displaying Chipping and Drumming		JH
SN045	03/04/2019	07:37:40	Snipe	1	PB4, (Cutover bog) Flying		JH
SN046	05/04/2019	09:40:43	Snipe	1	PB4, (Cutover bog) Flying		JH
SN047	05/04/2019	10:01:45	Snipe	1	PB4, (Cutover bog) Flying		JH
SN048	05/04/2019	11:15:46	Snipe	1	PB4, (Cutover bog) Flying		JH
SN049	08/04/2019	11:13:03	Snipe	1	PB4, (Cutover bog) Flying		JH
SN050	09/04/2019	09:06:24	Snipe	1	PB4, (Cutover bog) Flying		JH
SN051	09/04/2019	11:09:15	Snipe	1	PB4, (Cutover bog) Flying		JH
SN052	10/04/2019	07:30:10	Snipe	2	PB4, (Cutover bog) Flying		JH
SN053	10/04/2019	08:14:10	Snipe	1	PB4, (Cutover bog) Flying		JH
SN054	10/04/2019	08:24:23	Snipe	1	PB4, (Cutover bog) Chipping Snipe		JH
SN055	10/04/2019	09:00:14	Snipe	1	PB4, (Cutover bog) Chipping Snipe		JH



Breeding Bird Survey								
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity		Comments	Surveyor
SN056	12/04/2019	08:53:08	Snipe	1	PB4, (Cutover bog)	Flying		JH
SN057	12/04/2019	09:05:00	Snipe	1	PB4, (Cutover bog)	Flying		JH
SN058	15/04/2019	09:24:10	Snipe	1	PB4, (Cutover bog)	Flying and Calling		JH
SN059	15/04/2019	11:34:26	Snipe	1	PB4, (Cutover bog)	Flying		JH
SN060	15/04/2019	12:05:48	Snipe	1	PB4, (Cutover bog)	flying		JH
SN061	17/04/2019	05:56:18	Snipe	1	PB4, (Cutover bog)	Chipping SN		JH
SN062	17/04/2019	06:37:24	Snipe	2	PB4, (Cutover bog)	Flying		JH
SN063	24/04/2019	09:55:36	Snipe	1	PB4, (Cutover bog)	Flying and calling		JH
SN064	01/05/2019	06:30:30	Snipe	1	PB4, (Cutover bog)	Flushed by observer		JH
SN065	01/05/2019	07:30:09	Snipe	1	PB4, (Cutover bog)	Flushed by observer		JH
SN066	08/05/2019	13:20:02	Snipe	2	PB4, (Cutover bog)	Flushed by observer		JH
SN067	14/05/2019	06:21:47	Snipe	2	PB4, (Cutover bog)			JH
SN068	13/06/2019	13:31:39	Snipe	1	PB4, (Cutover bog)	Drumming		JH
SN069	14/06/2019	06:37:01	Snipe	1	PB4, (Cutover bog)	Chipping		JH
SN070	18/06/2019	06:50:00	Snipe	1	FL2, (Acid oligotrophic lakes) PB4, (Cutover bog)	Chipping		JH
SN071	18/06/2019	07:42:48	Snipe	1	FL2, (Acid oligotrophic lakes) PB4, (Cutover bog)	Drumming		JH
SN072	01/07/2019	10:15:31	Snipe	1	FL2, (Acid oligotrophic lakes)	Flushed by observer		JH
SN073	01/07/2019	12:45:40	Snipe	1	PB4, (Cutover bog) FL2, (Acid oligotrophic lakes)	Flushed by observer		JH
SN074	11/07/2019	09:16:53	Snipe	1	PB4, (Cutover bog)			JH
SN075	11/07/2019	10:57:07	Snipe	2	PB4, (Cutover bog)	Flushed by observer		JH
SN076	17/07/2019	12:23:17	Snipe	1	PB4, (Cutover bog)	Flushed by observer		JH



Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
SN001	03/10/2018		Snipe	1		flushed by observer	JH
SN002	03/10/2018		Snipe	1		flushed by observer	JH
SN003	03/10/2018		Snipe	1			JH
SN004	03/10/2018		Snipe	4			JH
SN005	03/10/2018		Snipe	1			JH
SN006	03/10/2018		Snipe	1			JH
SN007	03/10/2018		Snipe	3			JH
SN008	03/10/2018		Snipe	1			JH
SN009	03/10/2018		Snipe	2			JH
SN010	05/10/2018	10:48:00	Snipe	1		Flushed by observer from PB4	JH
SN011	05/10/2018		Snipe	1			JH
SN012	15/10/2018	11:40:00	Snipe	2		Flushed by observer from PB4	JH
SN013	15/10/2018	14:21:00	Snipe	1		Flushed by observer from PB4	JH
SN014	15/10/2018	15:10:00	Snipe	1		Flushed by Observer from PB4	JH
SN015	22/10/2018	09:44:00	Snipe	1		flushed by observer	JH
SN016	22/10/2018	12:21:00	Snipe	1		flushed by observer	JH
SN017	22/10/2018	12:25:00	Snipe	2		Flushed by observer	JH
SN018	22/10/2018	12:31:00	Snipe	5		Flushed from PB4 by observer	JH
SN019	22/10/2018	12:34:00	Snipe	2		Flushed from PB4 by observer	JH
SN020	22/10/2018	15:36:00	Snipe	1		Flushed from PB4 by observer	JH
SN021	05/11/2018		Snipe	1			
SN022	05/11/2018	13:10:00	Snipe	5		PB4, (Cutover bog) Flushed by observer	JH
SN023	05/11/2018	13:23:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH



Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
SN024	05/11/2018	13:37:00	Snipe	8		PB4, (Cutover bog) Flushed by observer	JH
SN025	08/11/2018	09:36:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN026	14/11/2018	10:12:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN027	14/11/2018	10:18:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN028	14/11/2018	11:00:00	Snipe	5		PB4, (Cutover bog) Flushed by observer	JH
SN029	19/11/2018		Snipe	1			JH
SN030	19/11/2018		Snipe	1			JH
SN031	19/11/2018		Snipe	1			JH
SN032	19/11/2018		Snipe	1			JH
SN033	19/11/2018	10:12:00	Snipe	2		Flushed by observer	JH
SN034	19/11/2018	10:50:00	Snipe	2		PB4, (Cutover bog) Flushed by observer	JH
SN035	21/11/2018	09:30:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN036	21/11/2018	10:10:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN037	26/11/2018	09:47:00	Snipe	2		PB4, (Cutover bog) Flushed by observer	JH
SN038	26/11/2018	09:56:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN039	26/11/2018	11:00:00	Snipe	2		PB4, (Cutover bog) Flushed by observer	JH
SN040	27/11/2018	09:21:00	Snipe	1		Flushed by observer	JH
SN041	03/12/2018	09:48:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN042	03/12/2018		Snipe	1			JH
SN043	03/12/2018		Snipe	1			JH
SN044	05/12/2018	09:30:00	Snipe	1		PB4, (Cutover bog) Landing on water	JH
SN045	05/12/2018	10:46:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN046	05/12/2018		Snipe	2			JH



Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
SN047	06/12/2018		Snipe	1			JH
SN048	06/12/2018	14:08:00	Snipe	2		PB4, (Cutover bog) Flushed by observer	JH
SN049	17/12/2018	09:22:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN050	17/12/2018	09:24:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN051	17/12/2018	09:25:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN052	17/12/2018	09:26:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN053	17/12/2018		Snipe	1			JH
SN054	17/12/2018	09:37:00	Snipe	2		PB4, (Cutover bog) Flushed by observer	JH
SN055	17/12/2018	10:35:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN056	17/12/2018	10:40:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN057	17/12/2018	10:46:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN058	17/12/2018	10:53:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN059	17/12/2018	10:57:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN060	17/12/2018	12:29:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN061	17/12/2018	13:00:00	Snipe	2		PB4, (Cutover bog) Flushed by observer	JH
SN062	17/12/2018	13:01:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN063	17/12/2018	13:52:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN064	17/12/2018	14:20:00	Snipe	3		PB4, (Cutover bog) Flushed by observer	JH
SN065	18/12/2018	10:10:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN066	18/12/2018	10:32:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN067	18/12/2018	10:48:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN068	18/12/2018	11:00:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN069	18/12/2018	11:42:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH



Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
SN070	18/12/2018	12:10:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN071	18/12/2018	12:13:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN072	18/12/2018	12:15:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN073	18/12/2018	11:02:00	Snipe	3		PB4, (Cutover bog) Flushed by observer	JH
SN074	18/12/2018	11:03:00	Snipe	5		PB4, (Cutover bog) Flushed by observer	JH
SN075	19/12/2018		Snipe	1			JH
SN076	02/01/2019		Snipe	1			JH
SN077	02/01/2019		Snipe	1			JH
SN078	03/01/2019		Snipe	1			JH
SN079	03/01/2019		Snipe	1			JH
SN080	03/01/2019		Snipe	1			JH
SN081	08/01/2019		Snipe	1			JH
SN082	08/01/2019		Snipe	1			JH
SN083	08/01/2019		Snipe	1			JH
SN084	09/01/2019	13:30:00	Snipe	6		PB4, (Cutover bog) Flushed by observer	JH
SN085	09/01/2019	13:38:00	Snipe	3		PB4, (Cutover bog) Flushed by observer	JH
SN086	09/01/2019	13:39:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN087	09/01/2019	13:42:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN088	09/01/2019	13:44:00	Snipe	3		PB4, (Cutover bog) Flushed by observer	JH
SN089	15/01/2019	11:02:00	Snipe	2		PB4, (Cutover bog) Flushed by observer	JH
SN090	15/01/2019		Snipe	1			JH
SN091	15/01/2019	13:35:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN092	17/01/2019	11:09:00	Snipe	3		PB4, (Cutover bog) Flushed by observer	JH



Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
SN093	17/01/2019	11:10:00	Snipe	2		PB4, (Cutover bog) Flushed by observer	JH
SN094	17/01/2019	11:11:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN095	17/01/2019	11:22:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN096	28/01/2019		Snipe	1			JH
SN097	28/01/2019		Snipe	1			JH
SN098	28/01/2019		Snipe	1			JH
SN099	04/02/2019		Snipe	1			JH
SN100	04/02/2019		Snipe	2			JH
SN101	04/02/2019		Snipe	3			JH
SN102	04/02/2019		Snipe	1			JH
SN103	06/02/2019	09:25:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN104	06/02/2019	09:39:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN105	06/02/2019	09:40:00	Snipe	2		PB4, (Cutover bog) Flushed by observer	JH
SN106	06/02/2019	09:42:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN107	06/02/2019	09:50:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN108	06/02/2019	10:18:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN109	06/02/2019	12:56:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN110	08/02/2019	09:48:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN111	11/02/2019	11:10:00	Snipe	3		PB4, (Cutover bog) Flushed by observer	JH
SN112	11/02/2019	11:12:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN113	11/02/2019	11:46:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN114	11/02/2019	11:52:00	Snipe	2		PB4, (Cutover bog) Flushed by observer	JH
SN115	11/02/2019	11:55:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN116	11/02/2019	11:58:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN117	11/02/2019	13:12:00	Snipe	2		PB4, (Cutover bog) Flushed by observer	JH



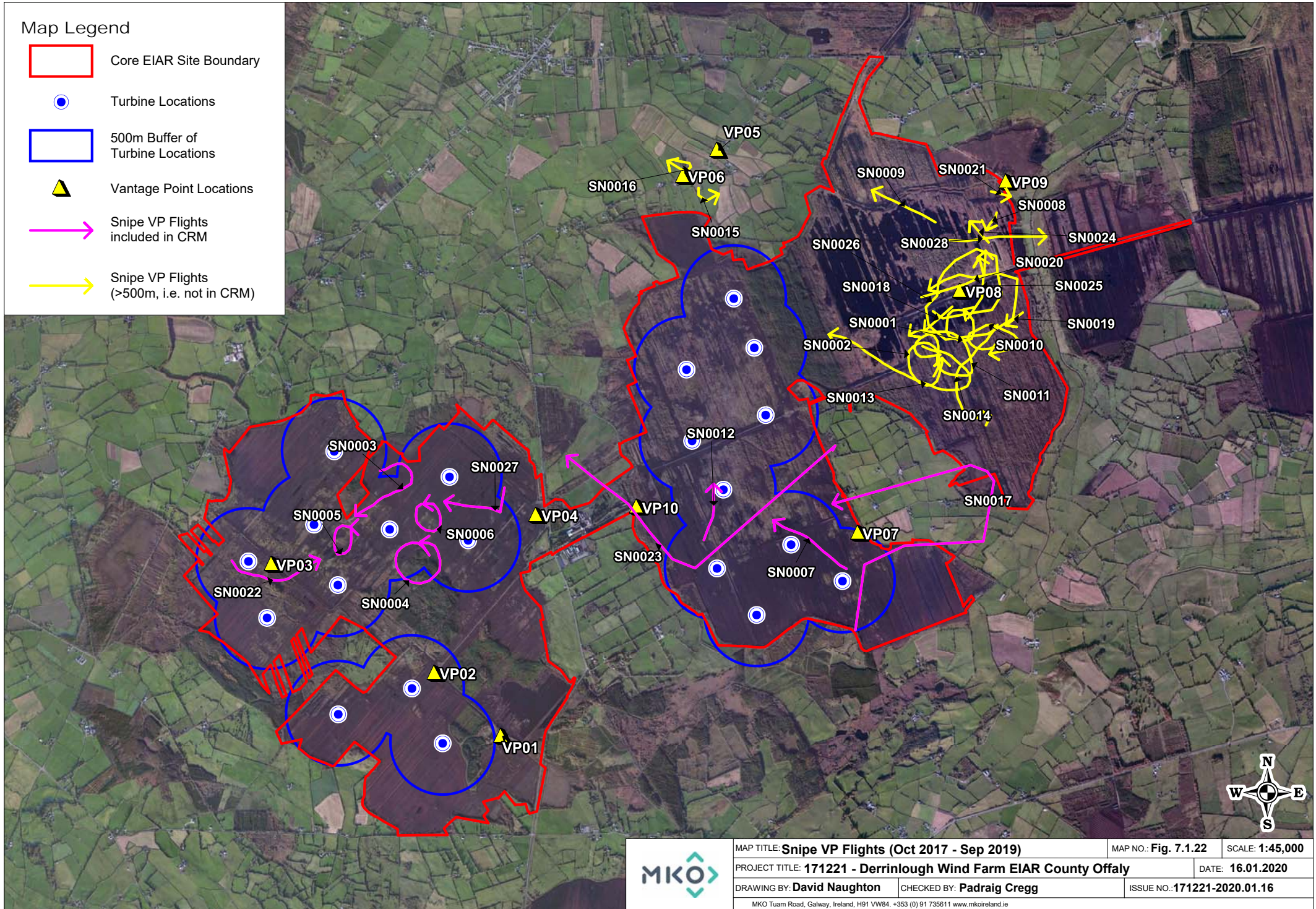
Winter Transect/Waterfowl Survey							
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity	Surveyor
SN118	11/02/2019	14:25:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN119	11/02/2019	14:57:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN120	11/02/2019		Snipe	1			JH
SN121	15/02/2019	12:20:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN122	15/02/2019	12:24:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN123	25/02/2019		Snipe	2			JH
SN124	25/02/2019		Snipe	1			JH
SN125	05/03/2019	14:58:00	Snipe	1		Flushed by observer	JH
SN126	12/03/2019	11:24:00	Snipe	1		Flushed by observer	JH
SN127	12/03/2019		Snipe	1			JH
SN128	12/03/2019	12:20:00	Snipe	1		Flushed by observer	JH
SN129	13/03/2019	09:22:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN130	13/03/2019	09:52:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN131	13/03/2019	11:42:00	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN132	14/03/2019	09:10:00	Snipe	2		PB4, (Cutover bog) Flushed by observer	JH
SN133	14/03/2019	10:05:00	Snipe	4		PB4, (Cutover bog) Flushed by observer	JH
SN134	14/03/2019	12:30:00	Snipe	2		PB4, (Cutover bog) Flushed by observer	JH
SN135	28/03/2019		Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN136	28/03/2019		Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
SN137	05/04/2019	14:43:13	Snipe	2		PB1, (Raised bog) FL2, (Acid oligotrophic lakes) Flushed by observer	JH
SN138	03/05/2019	14:03:56	Snipe	1		PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Chipping	JH
SN139	23/05/2019	10:41:37	Snipe	2		FL2, (Acid oligotrophic lakes) PB4, (Cutover bog) Chipping and drumming	JH



Incidental Observations						
Date	Survey Type	Location	Species	No. of Birds	Notes	Surveyor
15/01/2019	Commuting/ Migratory VP	CMVP1	Snipe	1	GA1, (Improved agricultural grassland) Travelling, Heard Calling	TR
17/01/2019	Commuting/ Migratory VP	CMVP2	Snipe	1	WD4, (Conifer plantation)	TR
25/01/2019	Commuting/ Migratory VP	CMVP5	Snipe	2	Travelling	TR
07/03/2019	Crane VP	Close to VP 4	Snipe	1	18:55 PM Chipping Snipe - No Visual too dark	JH
14/03/2019	Crane VP	Close to VP 4	Snipe	1	18:56 PM Chipping Snipe	JH
10/12/2018	HH Roost Survey	HHVP6	Snipe			PM
11/12/2018	HH Roost Survey	HHVP5	Snipe	2		PM
17/12/2018	HH Roost Survey	HHVP2	Snipe	1		PM
18/12/2018	HH Roost Survey	HHVP4	Snipe	4		PM
21/03/2019	HH Roost Survey	HHVP3	Snipe	1	19:06 PM Chipping Snipe	JH

Map Legend

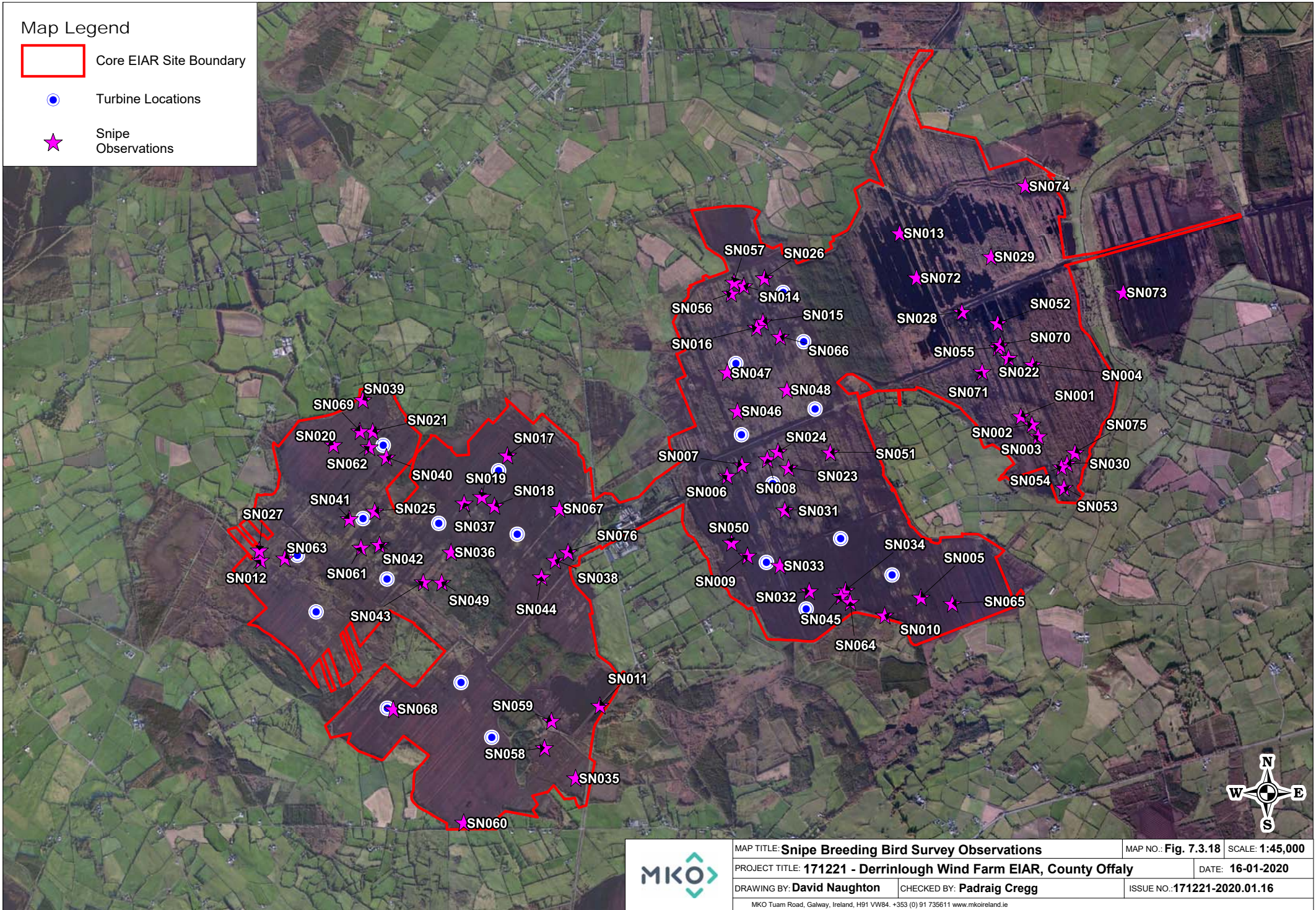
- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ Vantage Point Locations
- Snipe VP Flights included in CRM
- Snipe VP Flights (>500m, i.e. not in CRM)



MAP TITLE: Snipe VP Flights (Oct 2017 - Sep 2019)	MAP NO.: Fig. 7.1.22	SCALE: 1:45,000
PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR County Offaly		DATE: 16.01.2020
DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16
<small>MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie</small>		

Map Legend

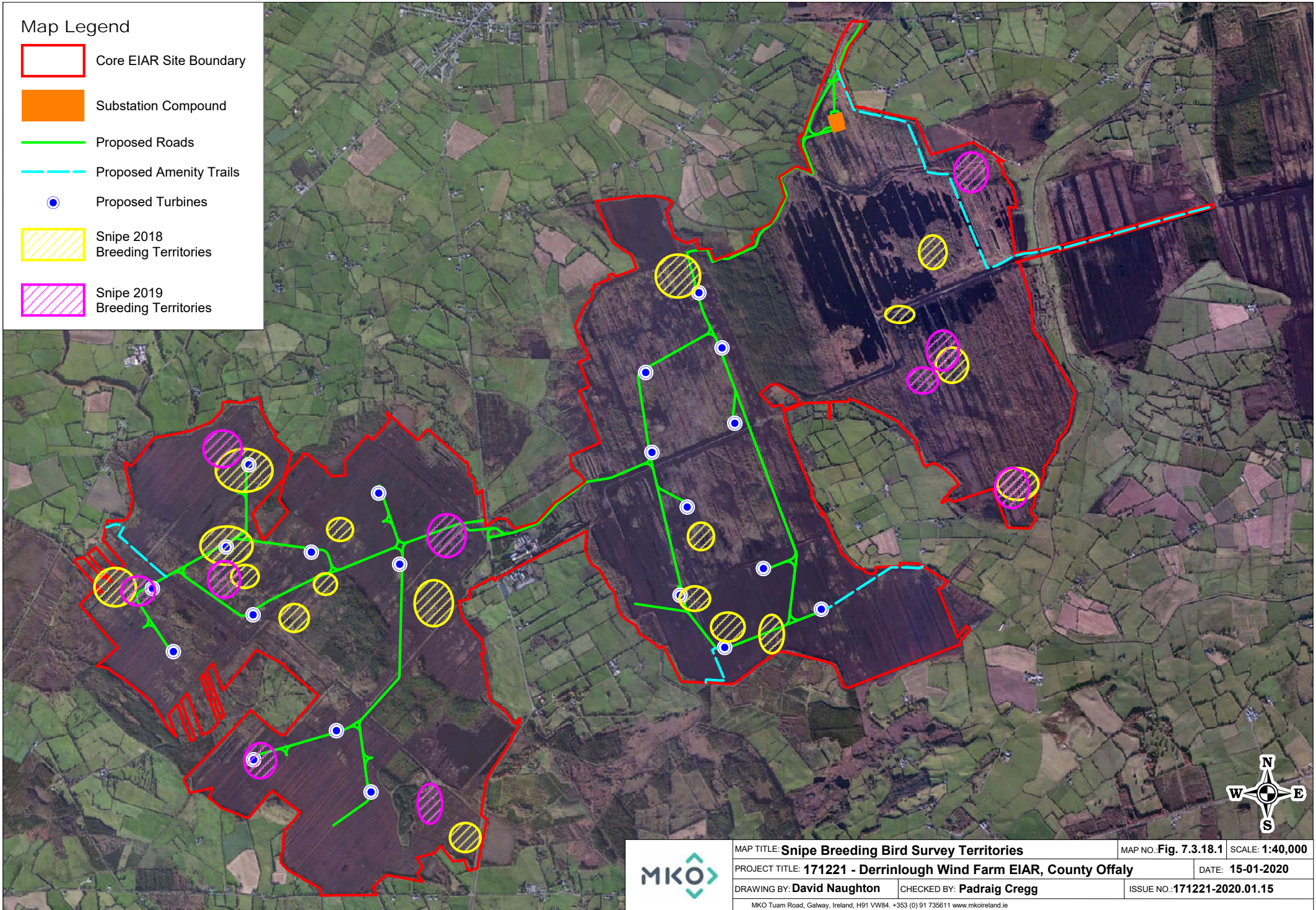
- Core EIAR Site Boundary
- Turbine Locations
- ★ Snipe Observations



	MAP TITLE: Snipe Breeding Bird Survey Observations	MAP NO.: Fig. 7.3.18	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly		DATE: 16-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.16	
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie			

Map Legend

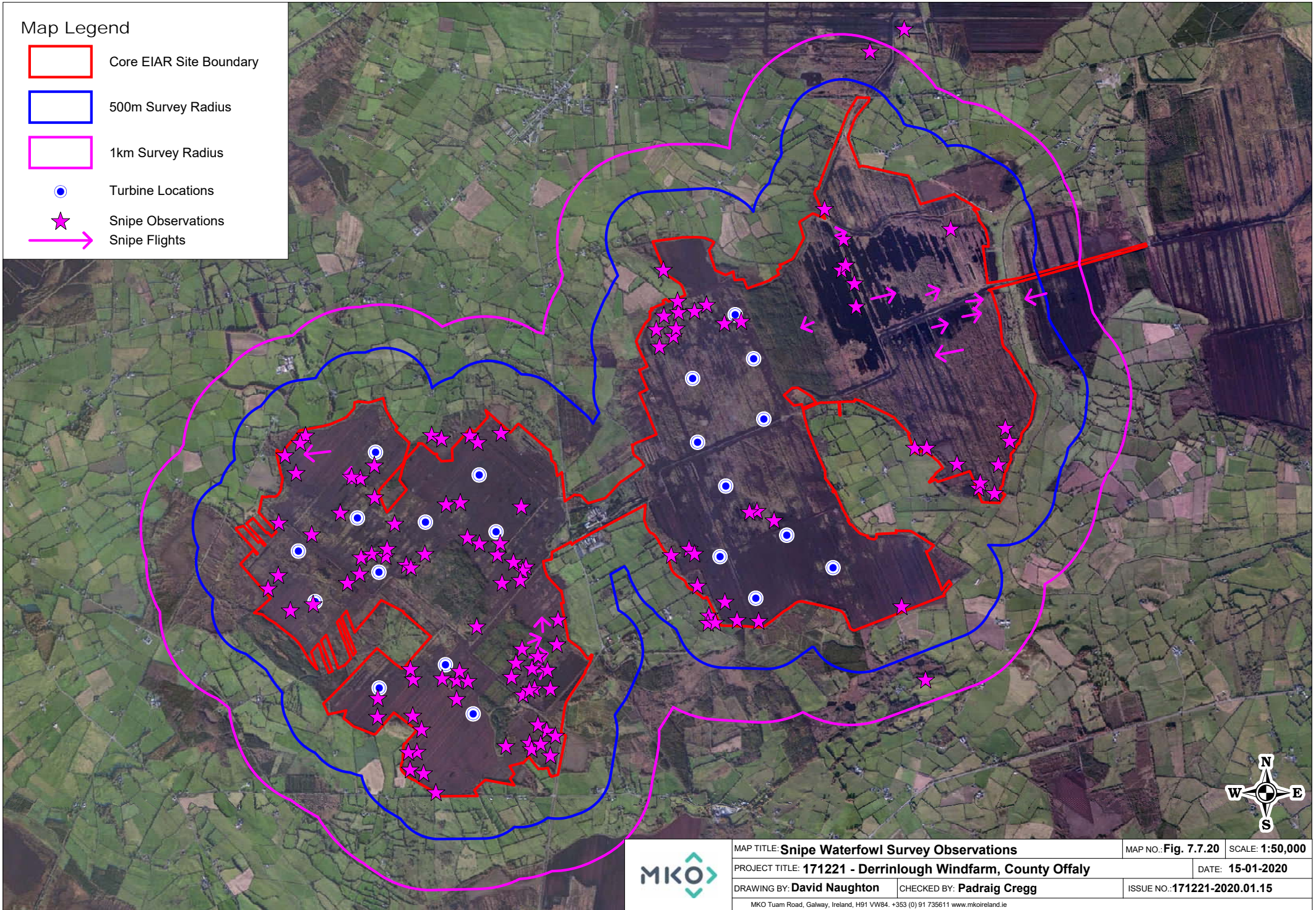
-  Core EIAR Site Boundary
-  Substation Compound
-  Proposed Roads
-  Proposed Amenity Trails
-  Proposed Turbines
-  Snipe 2018 Breeding Territories
-  Snipe 2019 Breeding Territories



	MAP TITLE: Snipe Breeding Bird Survey Territories		MAP NO.: Fig. 7.3.18.1	SCALE: 1:40,000	
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly			DATE: 15-01-2020	
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.15
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie				

Map Legend

- Core EIAR Site Boundary
- 500m Survey Radius
- 1km Survey Radius
- Turbine Locations
- ★ Snipe Observations
- ➔ Snipe Flights



	MAP TITLE: Snipe Waterfowl Survey Observations		MAP NO.: Fig. 7.7.20	SCALE: 1:50,000	
	PROJECT TITLE: 171221 - Derrinlough Windfarm, County Offaly			DATE: 15-01-2020	
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.15
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie				

Table 25 Ringed Plover Survey Data

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
RP0001	16/05/2019	3	Ringed Plover	1	08:28:00	8	8				PB4, (Cutover bog) landing on bog, calling	TR
RP0002	16/05/2019	3	Ringed Plover	1	09:04:39	20	5	10	10		PB4, (Cutover bog) alarming on ground before flying	TR
RP0006	21/05/2019	4	Ringed Plover	2	09:02:25	170	170				PB4, (Cutover bog) Travelling	TR
RP0007	21/05/2019	4	Ringed Plover	3	10:41:47	10	10				PB4, (Cutover bog) Travelling	TR
RP0003	21/05/2019	4	Ringed Plover	1	06:16:40	10	10				PB4, (Cutover bog) landing AW	TR
RP0004	21/05/2019	4	Ringed Plover	1	06:44:40	5	5				PB4, (Cutover bog) interacting with Lapwing, landing AW	TR
RP0005	21/05/2019	4	Ringed Plover	2	07:05:37	20	20				PB4, (Cutover bog) chased by Lapwing	TR

Vantage Point Survey – Non-flight Observations						
Date	VP	Species	No. of Birds	Time	Comments	Surveyor
02/08/2019	2	Ringed Plover	1	12:00:00	PB4, (Cutover bog) perched above water. North of VP1	TR

Breeding Bird Survey							
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity	Comments	Surveyor
RP001	17/04/2018		Ringed Plover	2	PB4, (Cutover bog) Roosting		JH
RP002	17/04/2018		Ringed Plover	2	PB4, (Cutover bog) Roosting		JH
RP003	07/06/2018		Ringed Plover	1			JH
RP004	08/06/2018		Ringed Plover	3			JH
RP005	08/06/2018		Ringed Plover	2	Nest with 4 eggs	Nest with 4 eggs	JH



Breeding Bird Survey								
Map Ref. No.	Survey Date	Time	Species	No. of birds	Habitat and Activity		Comments	Surveyor
RP006	15/06/2018		Ringed Plover	2	Breeding Pair in the area			JH
RP007	15/06/2018		Ringed Plover	2	Second Breeding Pair in Same area			JH
RP008	19/06/2018		Ringed Plover	1				JH
RP009	08/04/2019	07:55:13	Ringed Plover	2	PB4, (Cutover bog)	Roosting on wet area of bog		JH
RP010	14/05/2019	06:20:43	Ringed Plover	1	PB4, (Cutover bog)			JH
RP011	14/05/2019	06:02:57	Ringed Plover	2	PB4, (Cutover bog)	Flying and calling	Flushed by Observer	JH
RP012	11/06/2019	05:21:56	Ringed Plover	2	PB4, (Cutover bog)	Calling	Disturbed by observer	JH
RP013	12/06/2019	04:44:11	Ringed Plover	2	PB4, (Cutover bog)	Roosting at edge of wet area. Calling.	Disturbed by observer	JH
RP014	12/06/2019	05:43:36	Ringed Plover	2	PB4, (Cutover bog) Roosting at edge of wet area			JH
RP015	18/06/2019	08:46:51	Ringed Plover	2	PB4, (Cutover bog)	Pair roosting at scrape with 4 eggs	Scrape located. 4 eggs.	JH
RP016	18/06/2019	09:45:32	Ringed Plover	1	PB4, (Cutover bog) Foraging			JH
RP017	01/07/2019	13:04:41	Ringed Plover	1	PB4, (Cutover bog) Incubating eggs			JH
RP018	05/07/2019	07:51:34	Ringed Plover	1	PB4, (Cutover bog) Perched on bog			JH
RP019	05/07/2019	08:07:59	Ringed Plover	3	PB4, (Cutover bog) Flying and Calling			JH

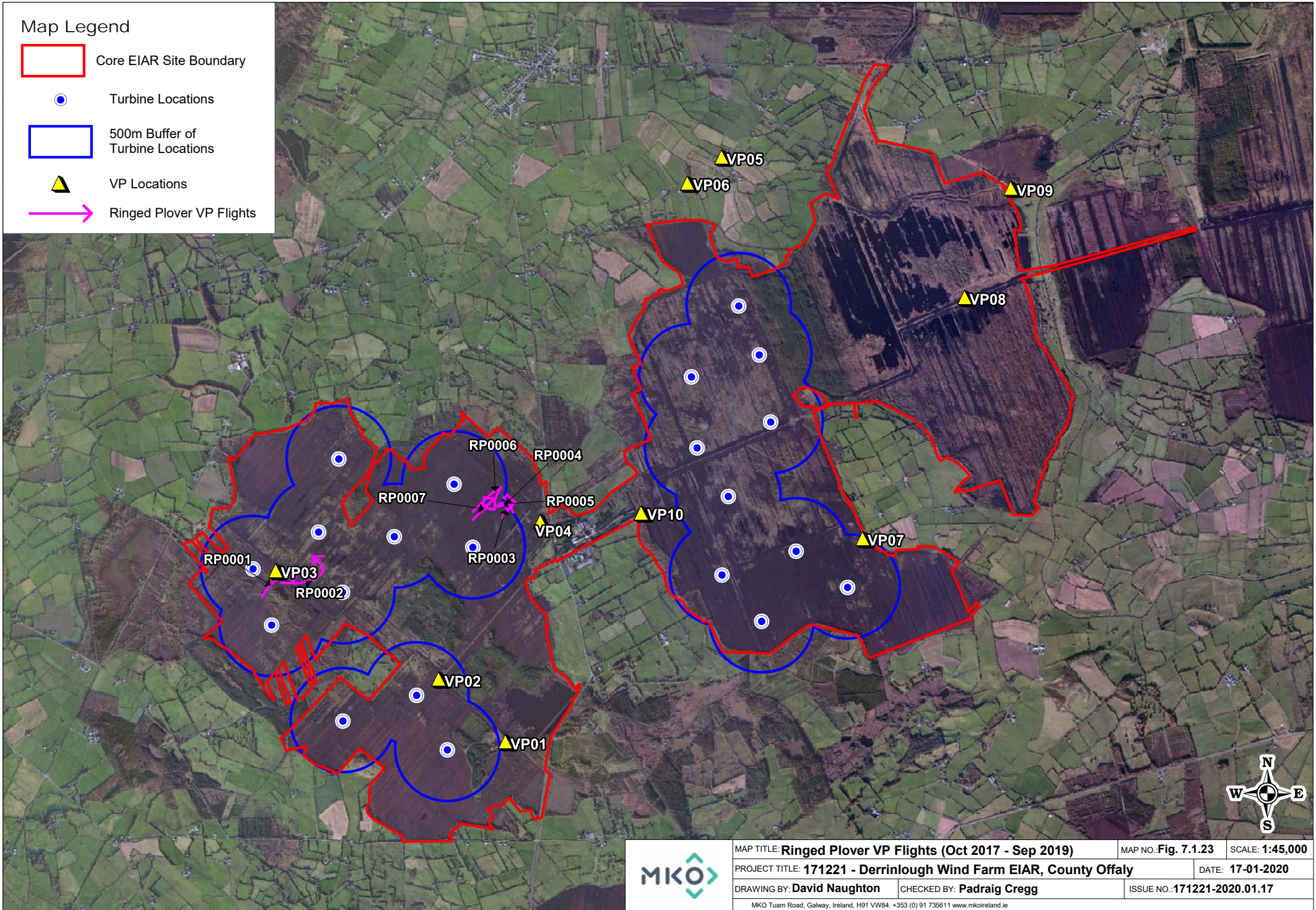
Winter Transect/Waterfowl Survey								
Map Ref.	Date	Time of Observation	Species	No. of birds	Feeding/Roosting	Notes on habitat and activity		Surveyor
RP001	29/04/2019	12:18:42	Ringed Plover	2		FL2, (Acid oligotrophic lakes)	PB4, (Cutover bog) Flying and Calling	JH
RP002	23/05/2019	11:04:55	Ringed Plover	2		FL2, (Acid oligotrophic lakes)	PB4, (Cutover bog) Foraging	JH
RP003	23/05/2019	11:32:00	Ringed Plover	1		FL2, (Acid oligotrophic lakes)	PB4, (Cutover bog) Foraging	JH
RP004	03/09/2019	10:05:27	Ringed Plover	1		FL2, (Acid oligotrophic lakes)	PB4, (Cutover bog) Foraging	JH



Incidental Observation						
Date	Survey Type	Location	Species	No. of Birds	Notes	Surveyor
07/03/2019	Crane VP	Close to VP 4	Ringed Plover	1	19:02PM - Calling - No Visual	JH







Map Legend

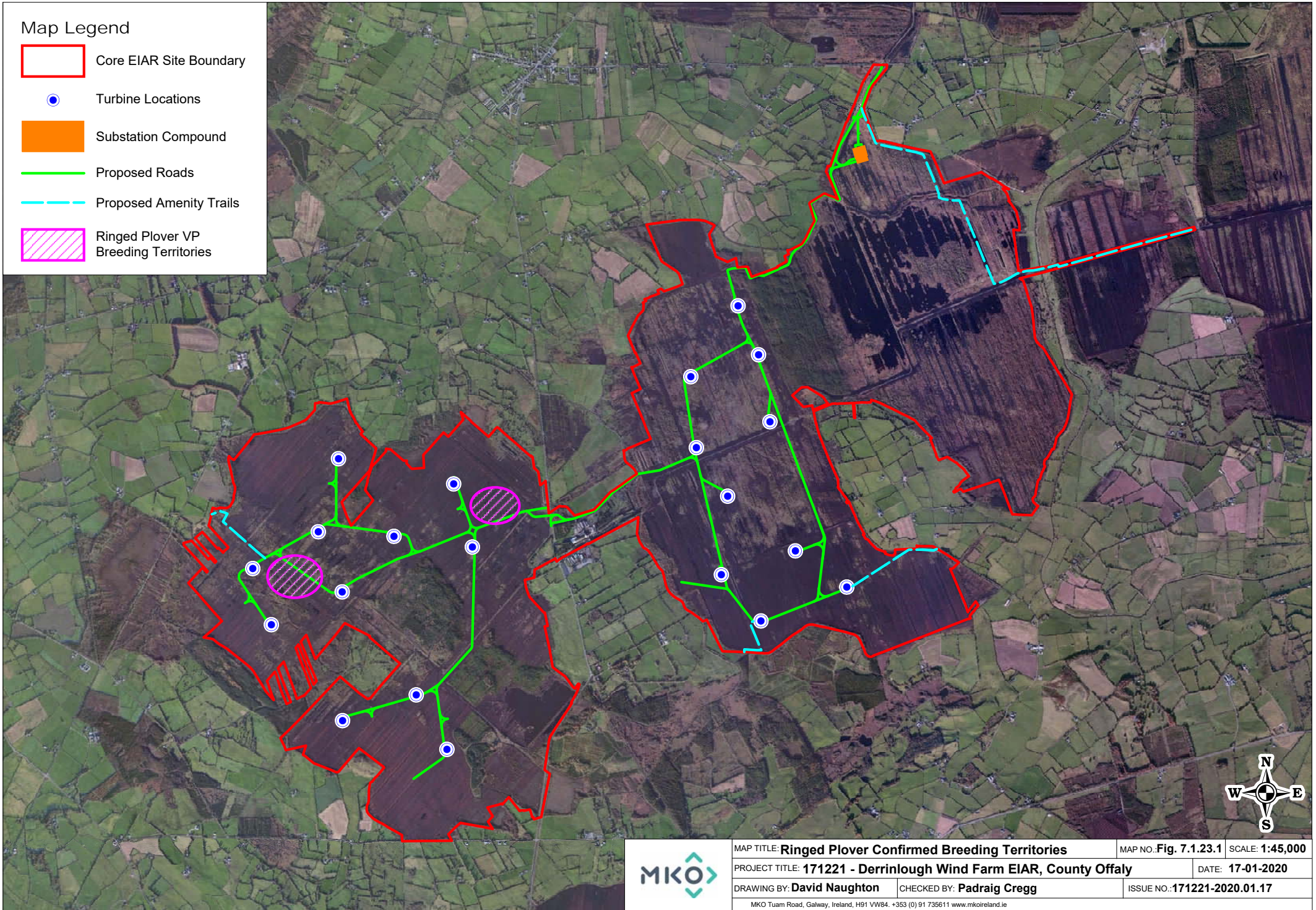
- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ VP Locations
- ➔ Ringed Plover VP Flights



	MAP TITLE: Ringed Plover VP Flights (Oct 2017 - Sep 2019)		MAP NO: Fig. 7.1.23	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly			DATE: 17-01-2020	
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.17
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie				

Map Legend

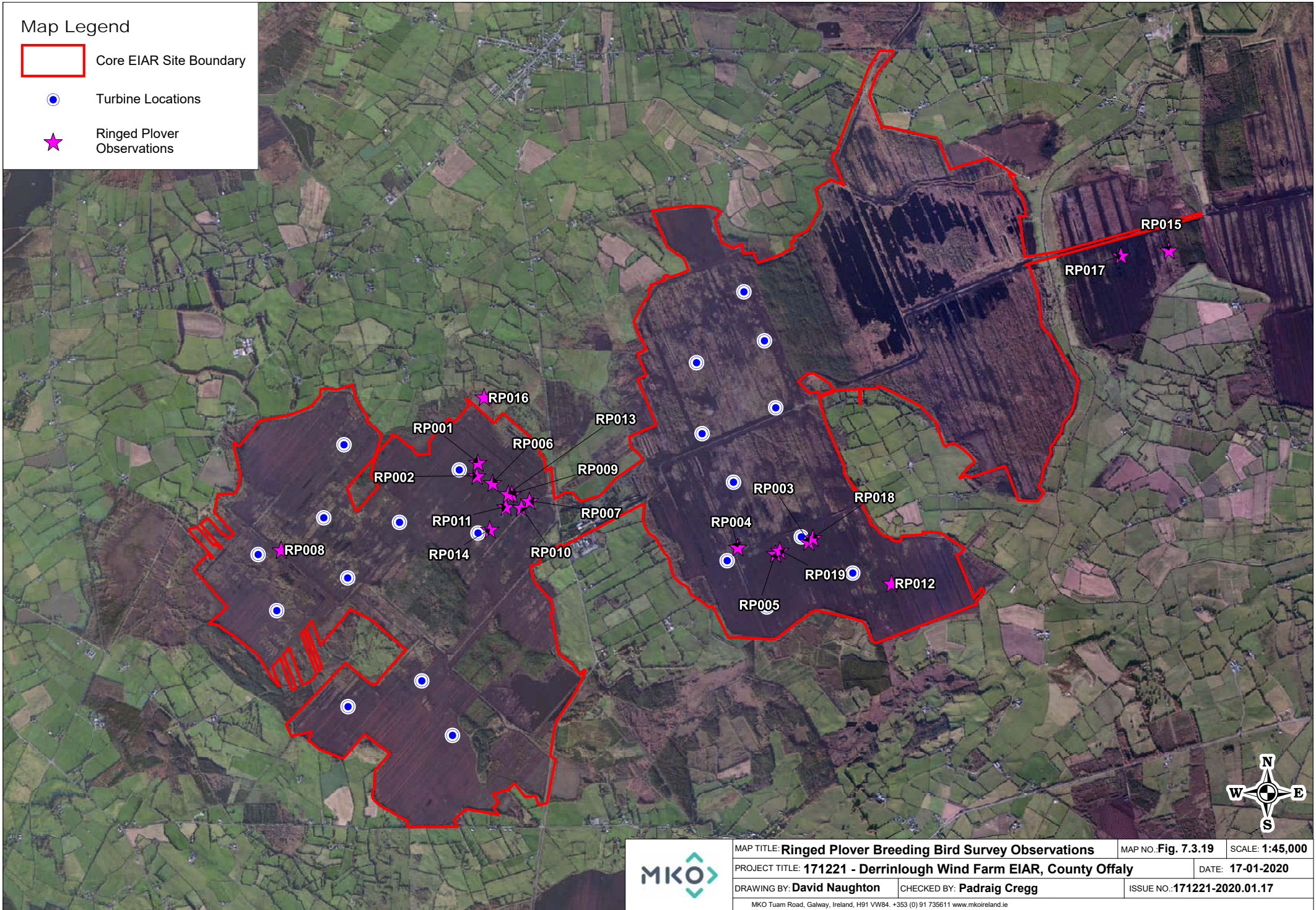
-  Core EIAR Site Boundary
-  Turbine Locations
-  Substation Compound
-  Proposed Roads
-  Proposed Amenity Trails
-  Ringed Plover VP Breeding Territories



MAP TITLE: Ringed Plover Confirmed Breeding Territories	MAP NO: Fig. 7.1.23.1	SCALE: 1:45,000
PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly	DATE: 17-01-2020	
DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.17
<small>MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkofireland.ie</small>		

Map Legend

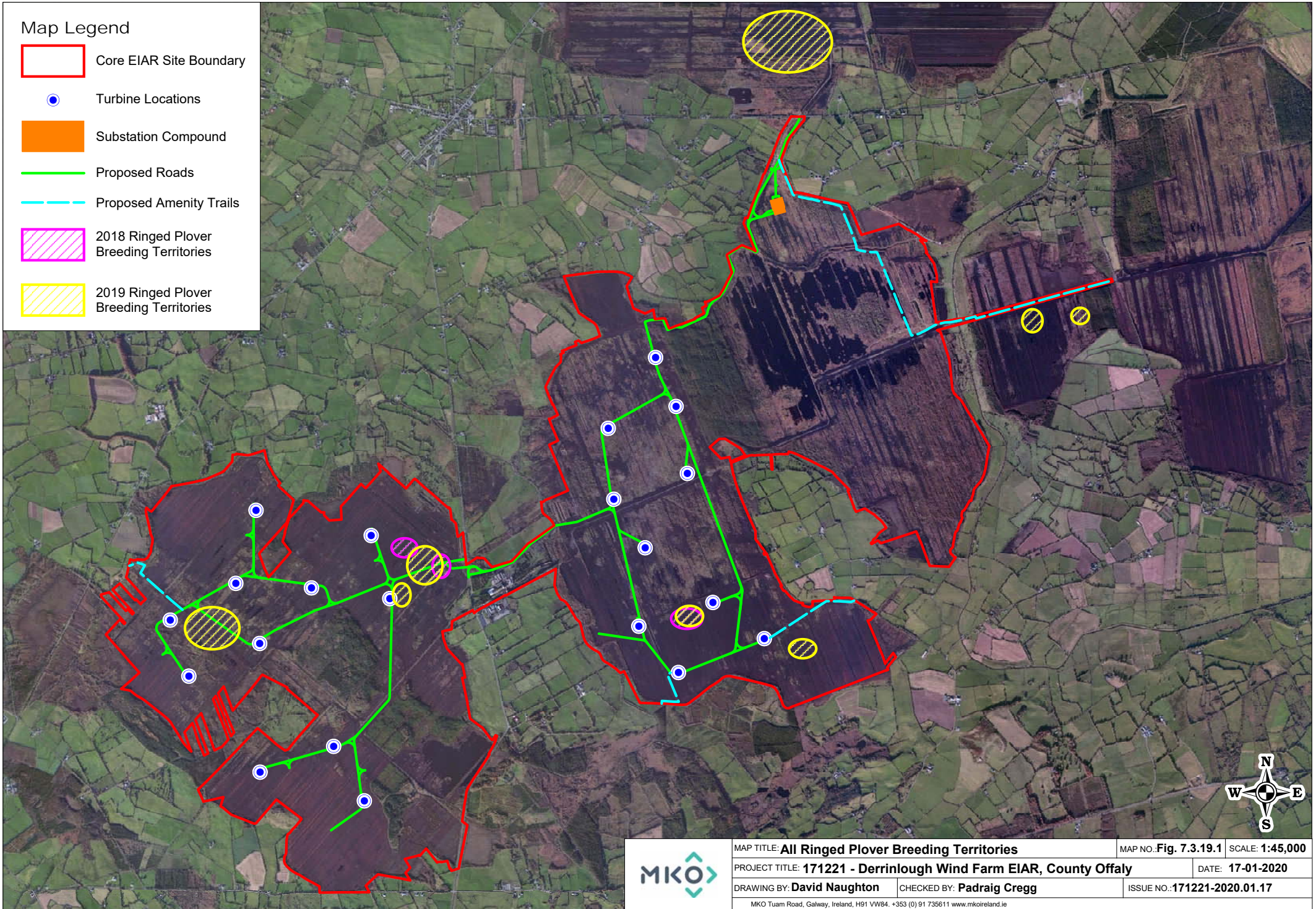
- Core EIAR Site Boundary
- Turbine Locations
- ★ Ringed Plover Observations



MAP TITLE: Ringed Plover Breeding Bird Survey Observations	MAP NO.: Fig. 7.3.19	SCALE: 1:45,000
PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly		DATE: 17-01-2020
DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.17
<small>MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie</small>		

Map Legend

-  Core EIAR Site Boundary
-  Turbine Locations
-  Substation Compound
-  Proposed Roads
-  Proposed Amenity Trails
-  2018 Ringed Plover Breeding Territories
-  2019 Ringed Plover Breeding Territories



	MAP TITLE: All Ringed Plover Breeding Territories	MAP NO.: Fig. 7.3.19.1	SCALE: 1:45,000
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly	DATE: 17-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.17
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie		



Table 26 Teal Survey Data

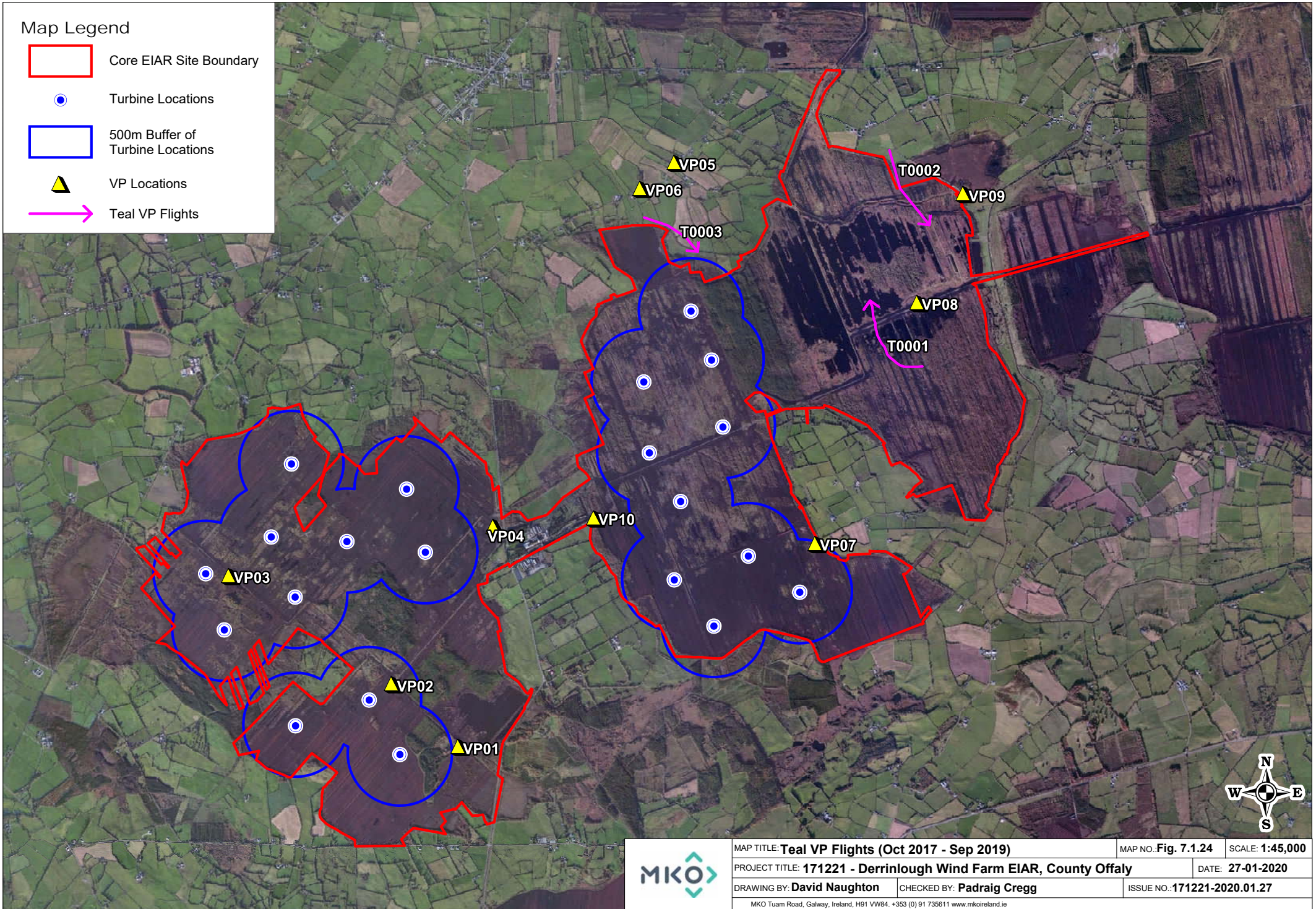
Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
T0001	11/12/2018	8	Teal	4	10:18:00	22	22				PB4, (Cutover bog) Travelling	JH
T0002	09/05/2019	9	Teal	3	06:55:00	31		31			WN7, (Bog woodland) Travelling	JK
T0003	02/07/2019	6	Teal	1	12:12:30	135		20	115		GA1, (Improved agricultural grassland) Hunting	JH

Vantage Point Non-Flight Observations						
Date	VP	Species	No. of Birds	Time	Comments	Surveyor
10/01/2018	5	Teal	4	08:28:00	Feeding on pond east of tracks south end.	SON

Incidental Observation						
Date	Survey Type	Location	Species	No. of Birds	Notes	Surveyor
12/02/2019	VP Survey	VP3	Teal	1	Calling - no visual - too dark	JH

Map Legend

- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ VP Locations
- Teal VP Flights



	MAP TITLE: Teal VP Flights (Oct 2017 - Sep 2019)	MAP NO.: Fig. 7.1.24	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly		DATE: 27-01-2020	
	DRAWING BY: David Naughton	CHECKED BY: Padraig Cregg	ISSUE NO.: 171221-2020.01.27	
	MKO Tuam Road, Galway, Ireland, H91 VW84. +353 (0) 91 735611 www.mkoireland.ie			

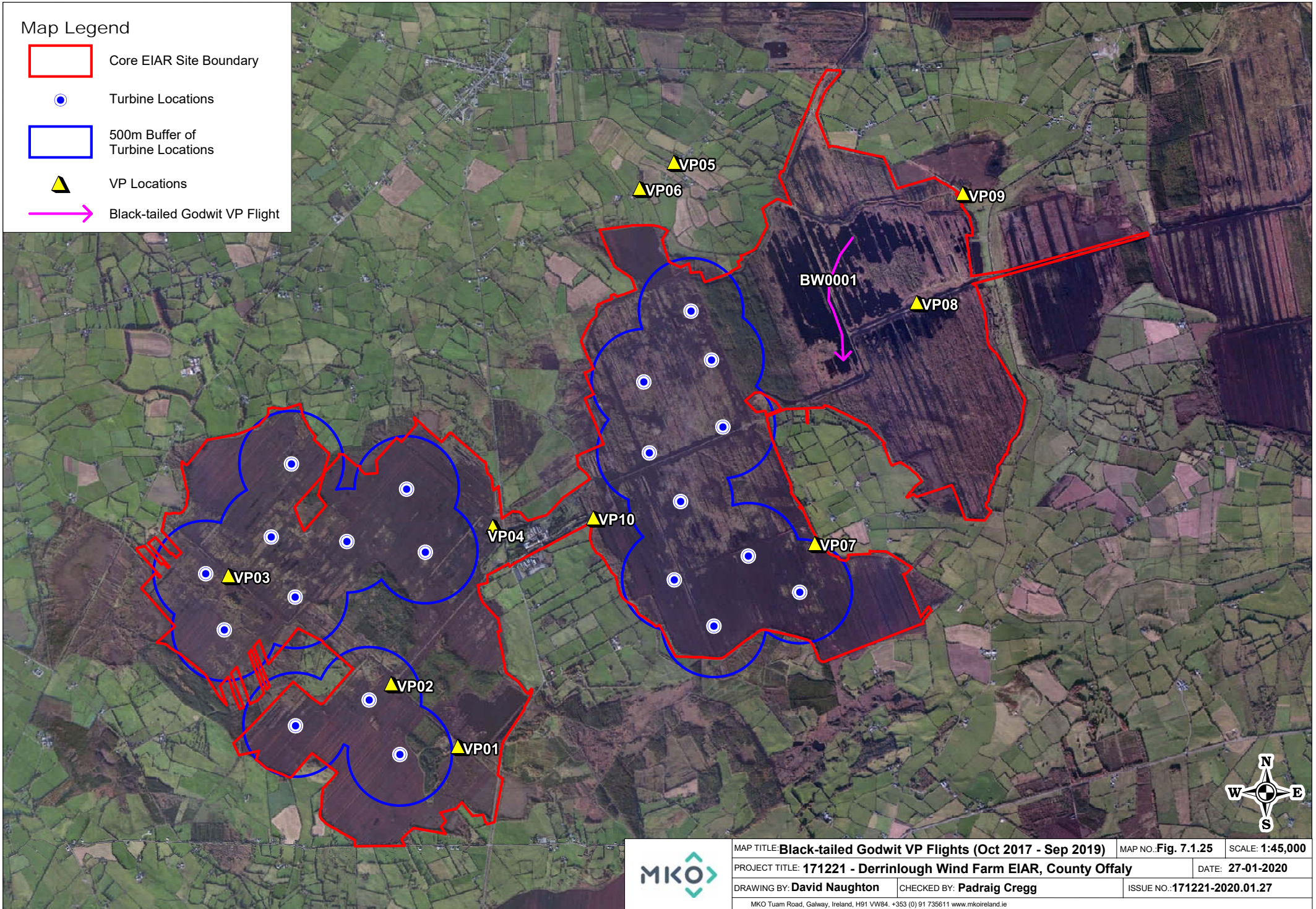
Table 27 Black-tailed Godwit Survey Data

Vantage Point Survey												
Map Ref.	Date	VP	Species	No. of Birds	Time of flight	Duration of flight (s)	Band 1 (0-10m)	Band 2 (10-25m)	Band 3 (25-175m)	Band 4 (>175m)	Notes on habitat and activity	Surveyor
BW0001	06/08/2019	6	Black-tailed Godwit	5	20:30:33	162			162		PB4, (Cutover bog) FL2, (Acid oligotrophic lakes) Travelling.	JH

Incidental Observations						
Date	Survey Type	Location	Species	No. of Birds	Notes	Surveyor
14/03/2019	Migratory Bird Survey	CMVP5	Black-tailed Godwit	180	GA1, (Improved agricultural grassland) Travelling	TR
14/03/2019	Migratory Bird Survey	CMVP5	Black-tailed Godwit	180	GA1, (Improved agricultural grassland) Travelling	TR
14/03/2019	Migratory Bird Survey	CMVP5	Black-tailed Godwit	150	GA1, (Improved agricultural grassland) Travelling	TR
14/03/2019	Migratory Bird Survey	CMVP5	Black-tailed Godwit	350	GA1, (Improved agricultural grassland) Travelling	TR
27/03/2019	Migratory Bird Survey	CMVP5	Black-tailed Godwit	140	FW2, (Depositing/upland rivers) GA1, (Improved agricultural grassland) Travelling	JH
09/09/2019	Migratory Bird Survey	CMVP3	Black-tailed Godwit	4	GA1, (Improved agricultural grassland) FW2, (Depositing/upland rivers) Landing on flooded area	JH

Map Legend

- Core EIAR Site Boundary
- Turbine Locations
- 500m Buffer of Turbine Locations
- ▲ VP Locations
- ➔ Black-tailed Godwit VP Flight



	MAP TITLE: Black-tailed Godwit VP Flights (Oct 2017 - Sep 2019)		MAP NO.: Fig. 7.1.25	SCALE: 1:45,000	
	PROJECT TITLE: 171221 - Derrinlough Wind Farm EIAR, County Offaly			DATE: 27-01-2020	
	DRAWING BY: David Naughton		CHECKED BY: Padraig Cregg		ISSUE NO.: 171221-2020.01.27
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