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1 **SHORT NOTE: Nocturnal calling by a Pied Flycatcher on**
2 **arrival in breeding habitat during spring migration**

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11
12
13 The Pied Flycatcher *Ficedula hypoleuca* is a long distance migrant which still
14 breeds in high densities in mid-Wales, despite the species' UK-wide
15 population decline of >50% in just 25 years (Eaton *et al.* 2015). Pied
16 Flycatchers winter in West Africa and generally return to their Welsh breeding
17 grounds in mid-late April. Males typically arrive first, in order to establish and
18 defend breeding territories prior to the arrival of the females several days later
19 (Cramp & Simmons 2004, Lundberg & Alatalo 2010).

20
21 Pied Flycatchers are visual foragers and are diurnally active during most of
22 their annual cycle, with the exception of their migration flights which like many
23 songbird species are undertaken nocturnally (Martin 1990). Much research
24 has been conducted on the behavior and ecology of the Pied Flycatcher,
25 including the timing of migration and arrival on the breeding grounds, but
26 there appears to be no record in the literature of this species vocalizing at
27 night (Cramp & Simmons 2004, Lundberg & Alatalo 2010). This record
28 documents the nocturnal calling of a Pied Flycatcher on arrival in breeding
29 habitat in spring.

30
31 On the 3rd of April 2017 a Pied Flycatcher was heard calling from 22:35 BST
32 (21:35 GMT) in an area of woodland at Llys dinam Field Centre near
33 Newbridge-on-Wye, mid Wales (52.216°N, 3.451°W). This location has a long
34 tradition of Pied Flycatcher monitoring based on a nestbox scheme first
35 established in 1911 (Slater 1998, 1999), and the bird was calling from a
36 location which normally holds a Pied Flycatcher breeding territory. Sunset on
37 this date was 19:51 BST, and civil dusk twilight ended at 20:26 BST.

38
39 The calling Pied Flycatcher appeared to be a newly arrived individual, as this
40 was the first record of a Pied Flycatcher at the Field Centre in spring 2017,
41 and none were seen or heard in the area during the preceding three days
42 (personal observations by FS who was running a course at the Field Centre
43 31st March to 2nd April), including during fieldwork in the same area of
44 woodland during the preceding day between 16:00 and 17:00 BST (JS, LB,
45 SC, personal observations). Furthermore, the earliest Pied Flycatchers to be
46 recorded in the county (Powys) in 2017 were reported only the previous day
47 near the village of Beulah, 11.5km from Llys dinam
48 (www.brecknockbirds.co.uk, report by Andrew Dally 2nd April 2017).

49

50 At the time of the observation on 3rd April 2017 there was light drizzle and the
51 external lights were on at the Field Centre, illuminating limited sections of the
52 surroundings, which were otherwise not subject to noticeable light pollution or
53 “skyglow”. The Pied Flycatcher was first heard calling at 22:35 BST and a
54 sound recording was made of the call with an iPhone; the call was distant, but
55 clearly audible on the recording (Cramp & Simmons 2004, Lundberg & Alatalo
56 2010). The sound file was immediately messaged to RT for confirmation of
57 the identification by comparison with the audio recordings available in the
58 xenocanto.com archive.

59
60 A short acoustic playback test was then carried out by playing Pied Flycatcher
61 calls using the first two such recordings available in the Xeno-Canto archive at
62 the time (both were recorded in Spain by José Carlos Sires on 20th
63 September 2016). The bird did not approach the speaker but appeared to call
64 in response to the playback, from multiple locations covering a diameter of
65 ~50m as it moved around within the woodland. Given the changing locations
66 from which calls were heard it is possible that there more than one bird may
67 have called, but this was not verified. The bird did not approach the speaker
68 but carried on calling until 23:00 BST, after which no more responses to
69 playback were obtained.

70
71 On the next day (4th April) bird surveys were undertaken in the same area at
72 Llysdinam Field Centre, and at nearby woodlands 2.5 Km from Llysdinam
73 (Coed Ty Mawr, 52.205°N, -3.487°W). No Pied Flycatchers were found at
74 Llysdinam, but at least three newly arrived males were on territories in Coed
75 Ty Mawr. Subsequent surveys revealed Pied Flycatchers to be present
76 continuously from 4th April at Coed Ty Mawr, and from 6th April at Llysdinam.
77 The first 2017 spring arrival at Llysdinam on the evening of the 3rd April was
78 10 days earlier than in the previous year (13th April 2016) and substantially
79 earlier than the long-term mean arrival date for the location, of 9th-11th April
80 (FS personal observations).

81
82 Taken together, the early date, the absence of Pied Flycatchers in the
83 preceding days at Llysdinam and the nearby woodlands of Coed Ty Mawr,
84 and the presence of Pied Flycatchers in subsequent days, suggests that the
85 Pied Flycatcher calling on the night of the 3rd of April was a newly arrived
86 male, which may have moved on from Llysdinam the same night or the
87 following morning. To our knowledge, this is the first record of nocturnal
88 calling by a newly arrived Pied Flycatcher during spring migration.

89
90 Nocturnal calling is regular among some species of songbirds that migrate in
91 loose flocks, such as Redwings *Turdus iliacus*, which call in flight in order to
92 maintain contact with the rest of the flock (Cramp & Simmons 2004, Hamilton
93 1962, La 2012). Other species such as Common Nightingales *Luscinia*
94 *meigarhynchos* sing at night from breeding territories, primarily in order to
95 attract nocturnally migrating females into the breeding territory during –or
96 following- arrival (Amrhein *et al.* 2002, Roth *et al.* 2009), and switch to
97 primarily daytime singing once they have acquired a mate (Cramp & Simmons
98 2004, Amrhein *et al.* 2002, Thomas 2002). The Pied Flycatcher calls reported
99 here were given from perches within suitable breeding habitat. However, in

100 contrast to habitat specialists such as Reed Warblers *Acrocephalus*
101 *scirpaceus*, habitat generalists such as Pied Flycatchers do not appear to use
102 acoustic information, including song, as a cue for recognition of suitable
103 habitat (Mukhin *et al.* 2008). However, song rate is used by female Pied
104 Flycatchers as a cue for mate selection (Alatalo *et al.* 1990). The function of
105 the nocturnal calling that we report here is not known with certainty, but may
106 be a means by which newly arrived males assess the presence of other
107 (male) Pied Flycatchers in the locality. Indeed, this could even be the reason
108 why the calling bird that we observed moved on from the territory at Llysdinam
109 which appeared to be already occupied by another calling bird, though this
110 apparent rival was actually the group of observers with their playback
111 recording.

112
113

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