

# Black-winged Kite in the WP: increase in breeding population, vagrancy and range

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**B**lack-winged Kite *Elanus caeruleus* is widely distributed across the Afrotropical and Indomalayan regions, with marginal occurrence in the Western Palearctic (WP) and northern Australasia. The species occupies relatively open habitats, from semi-desert to forest margins and clearings within densely forested areas. Population densities range from sparse to locally abundant (Ferguson-Lees & Christie 2001). Three subspecies have been identified; two of them, *E c caeruleus* (hereafter *caeruleus*) and *E c vociferus* (hereafter *vociferus*) occur in the WP (del Hoyo & Collar 2014; see below). Both subspecies are readily identified in all plumages. The difference concerns the underwing pattern: *caeruleus* has pale secondaries – white or almost white, depending on light conditions; vo-

*ciferus* has dark grey secondaries, and as a result has a prominent white trailing edge to the secondaries, most distinct in adults (Forsman 2016).

In recent decades, Black-winged Kite has experienced a range extension in Europe and the Middle East. In some newly colonised areas, the breeding population is growing rapidly, which also results in an increase of vagrancy to neighbouring countries. This paper reviews the extralimital occurrence of the species in the WP and discusses the probable factors causing population growth and range extension.

## Methods

The region covered by our analysis concerns the WP within the boundaries proposed by van den

1 Black-winged Kites / Grijze Wouwen *Elanus caeruleus vociferus*, pair, Hula valley, Israel, 19 October 2011  
(Dror Galili)



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TABLE 1 Status of Black-winged Kite *Elanus caeruleus caeruleus* in France, Portugal and Spain (Dubois et al 2008, BirdLife International 2015, de Juana & Garcia 2015, Quaintenne et al 2016). \*First unsuccessful attempt was in 1983.

Country	Year of first record	Year of first breeding	Breeding population (pairs)
France	19th century	1990*	130-150
Portugal	1867	1944	500-1500
Spain	1865	1973	500-1000

Berg (2017) and includes Europe with Macaronesia, all the countries bordering the Black Sea and Mediterranean Sea, the Arabian Peninsula (sensu lato) and Iran. Information on breeding populations and vagrancy in the Middle East, northern Africa and south-western Europe was obtained from the literature and unpublished data by regional experts (see acknowledgments). The analysis of vagrancy in Europe includes all records, kindly provided by national rarities committees, from countries where Black-winged Kite does not breed. We have also included some records (almost all are documented photographically) that are still awaiting acceptance by the relevant rarities committees (see appendix 1). To test if vagrancy increased in recent years, we used a simple Poisson Generalized Linear Model that related total annual count in Europe to year and a quadratic term of year that accounts for non-linear relationships. This analysis was carried out in R version 3.3.2 (R Core Team 2016).

### Status in Europe

#### Breeding population

In Europe, *caeruleus* breeds in France, Portugal and Spain (table 1). The first breeding record on the continent was in southern Portugal in 1944, when two nests were found (England 1963). In Spain, the first nesting occurred in Toledo in 1973 (de Juana & Garcia 2015). In the following decades, the species spread north and west from south-western Iberia. At the beginning of the 21st century, the main breeding area included the south-western part of the Iberian peninsula, with the core range in Alentejo and Ribatejo (Portugal) and in Extremadura and western parts of Andalucía, Castilla-La Mancha and Castilla y León (Spain). Breeding in eastern and northern Iberia is widespread but the distribution is more fragmented and large parts of eastern Spain remain unoccupied (de

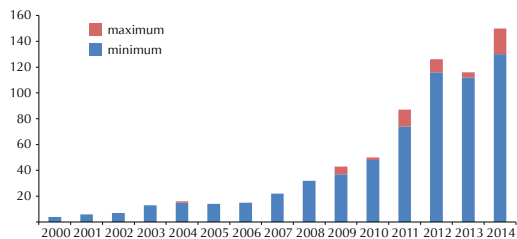


FIGURE 1 Minimum (blue) and maximum (red) number of breeding pairs of Black-winged Kite *Elanus caeruleus caeruleus* in France in 2000-14 (Dubois et al 2008, Quaintenne et al 2016)

Juana & Garcia 2015). The size of the Iberian population has recently been estimated at 1000-2500 pairs (BirdLife International 2015). The first successful nesting in France was in Pyrénées-Atlantiques in 1990. Since then, the population has grown rapidly, from four to seven pairs in 1998-2002 to as many as 130-150 in 2014. The expansion is particularly noticeable in recent years, when the population increased threefold between 2010 and 2014 (Dubois et al 2008, Quaintenne et al 2016; figure 1). The core breeding area includes the south-western part of the country, with the largest population in Pyrénées-Atlantiques (c 60 pairs) and Landes (c 50 pairs). In recent years, there has been a northward spread, with single pairs breeding in Pays-de-la-Loire, north-western France (Quaintenne et al 2016). In 2016, one pair has bred as far north as near Rennes, Ille-et-Vilaine, constituted the first breeding record for Bretagne (Philippe Dubois in litt).

TABLE 2 Records of Black-winged Kite *Elanus caeruleus caeruleus* in Europe (outside France, Portugal and Spain) to end of 2016

Country	Number of records	Year of first record
Germany	31	1828
Belgium	22	1992
Netherlands	20	1971
Switzerland	16	1990
Denmark	13	1998
Italy	11	1893
Bulgaria	10	1976
Greece	9	1830s
Sweden	4	2004
Czechia	3	1938
Austria	3	1986
Hungary	1	2012
Slovakia	1	2012
Poland	1	2016
Luxembourg	1	2016

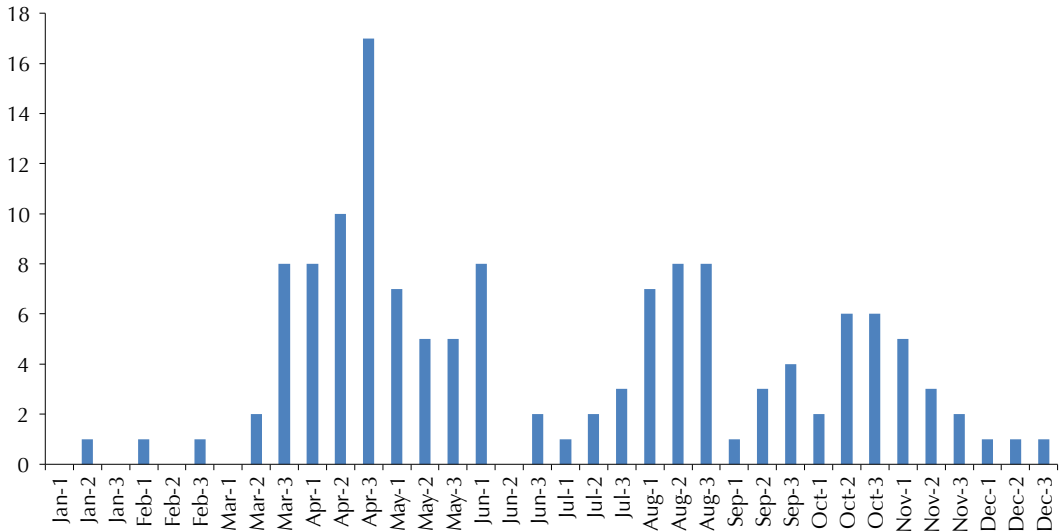


FIGURE 2 Distribution of records of Black-winged Kite *Elanus caeruleus caeruleus* in Europe (outside France, Portugal and Spain) in 10-day periods by date of discovery.

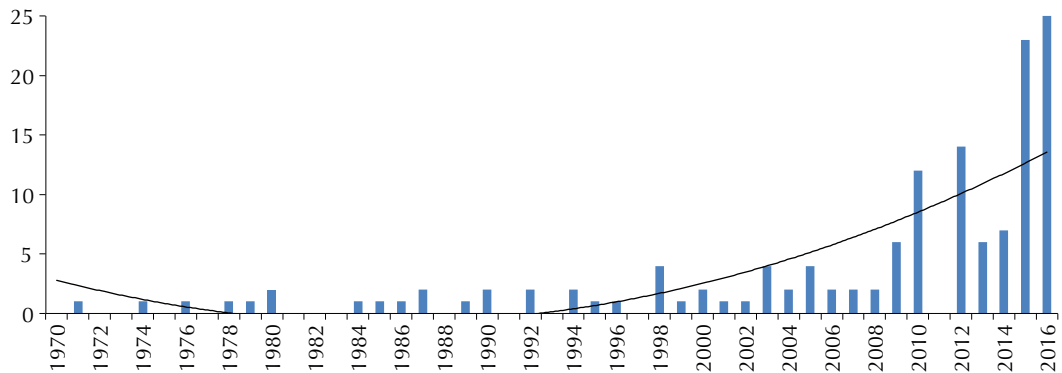


FIGURE 3 Annual totals of Black-winged Kite *Elanus caeruleus caeruleus* recorded in Europe (outside France, Portugal and Spain) in 1970-2016. Black line is prediction of mean count, based on Poisson Generalized Linear Model that relates count to year and quadratic term of year.

### Vagrancy

By the end of 2016, there were 143 records (totaling 147 birds) in Europe outside France, Portugal and Spain; 88 records were from the four countries (Belgium, Germany, the Netherlands and Switzerland) closest to the breeding areas in south-western Europe (table 2). Black-winged Kite is very rare in northern Europe, it has been recorded only in Sweden (four records), the northernmost record being at Skånium, Västergötland, in August 2013 (appendix 1). There are two main periods of occurrence in Europe: from the third decade of March to

the first decade of June (49% of all records), with the peak in the second and third decade of April, and from the first decade of August to the first decade of November (36% of records), with the highest number in August (figure 2). Winter records (seven from December-February) are few and come from southern Europe only (Bulgaria, Greece and Italy).

A Poisson Generalized Linear Model that related number of records to quadratic term of year indicated that there was a significant increase in the number of records in Europe from the 1990s to

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2016 ( $P < 0.0001$ ; figure 3). A notably significant increase has taken place in recent years: in 2010-16 there were 113 records, representing 81% of all records from the last 47 years. This was in line with the very large increase in the breeding population in France in the same period (cf above and figure 1). Best years were 2016 (25 records), 2015 (23 records), 2012 (14 records) and 2010 (12 records). Striking is the lack of records in 2011 (the only such case in the last 19 years). All European records relate to *caeruleus*.

### **Status in the Middle East**

Both subspecies occur in this region; *caeruleus* breeds in Egypt mainly in the Nile valley (see status in North Africa below). While most records outside Egypt concern *vociferus*, there are several records of *caeruleus*, eg, in Israel (before 1996), Oman and Saudi Arabia. The breeding population in Yemen is probably *caeruleus* (see below).

#### *Armenia*

The first record for this country was a bird photographed at Armash, Ararat, on 2 May 2016 (Dutch Birding 38: 245, 2016). The second occurred in Kotayk region, central Armenia, on 4 July 2016 (Ani Sarkisyan in litt). Both records involved *vociferus*.

#### *Bahrain*

There is only one confirmed record of *vociferus*, from March 2012 (Howard King in litt).

#### *Cyprus*

There are two records: from Mazotos on 13-14 March 2004 and Morphou on 9 November 2014. The latter record involved *vociferus*; the subspecific identity of the first record is unclear (Colin Richardson in litt).

#### *Georgia*

There are three records of *vociferus*: two in September 2013 and one in summer 2014 (Alexander Rukhaia in litt).

#### *Israel*

Up to 1996, there were only six records of *caeruleus* (Shirihai 1996). Subspecies *vociferus* was first recorded in Israel in 2003. Since then, it has been recorded with increasing frequency. The first breeding pair was found at Hula valley in 2011 (Perlman & Israeli 2013), and from that moment, Black-winged Kite has colonised large parts of Israel, in a remarkably rapid process. In early 2016, there were an estimated 130-150 breeding pairs,

covering most flat or undulating farmland regions in Israel, as far south as the northern Negev. The parts of the country with the densest populations are the Judean and Inner Coastal Plains, where c 50 pairs breed, and also the Hula and Jizreel valleys (figure 4).

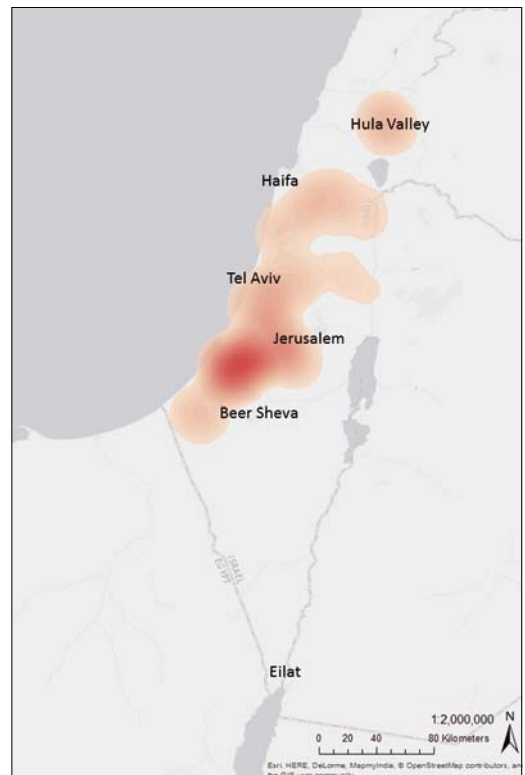
#### *Iran*

The species was first recorded as recently as 1998, after which it has colonised Iran quite rapidly. The first breeding record was in 2007 in Kerman province in the south-eastern part of the country (Khaleghizadeh et al 2011). In 2011, it was also found breeding in Fars province in central Iran and the following year three nests were found there (Vosoghi et al 2012). All records apparently involved *vociferus*.

#### *Iraq*

The first record was in 2000 but already in 2001 it was found breeding near Kirkuk in northern Iraq (Salim 2002). Since then, more breeding records

FIGURE 4 Range and density of breeding Black-winged Kite *Elanus caeruleus vociferus* in Israel in 2016. Densities higher in darker areas.





2 Black-winged Kites / Grijze Wouwen *Elanus caeruleus vociferus*, adult with juvenile, Hula valley, Israel, 19 November 2011 (Thomas Krumenacker)

3 Breeding habitat of Black-winged Kite *Elanus caeruleus*, Hula valley, Israel, 17 February 2008 (Thomas Krumenacker)





4 Black-winged Kites / Griize Wouwen *Elanus caeruleus vociferus*, pair, Hula valley, Israel, 27 November 2011 (Thomas Krumenacker)



5 Black-winged Kites / Griize Wouwen *Elanus caeruleus vociferus*, adult with juveniles on nest, Hula valley, Israel, 24 November 2011 (Thomas Krumenacker)

have been documented in Baghdad and Diyala provinces in central and eastern Iraq (Ararat et al 2011) and it is apparently expanding its range. The subspecific identity of the Iraqi records is unclear but all are assumed to have been *vociferus*.

#### *Jordan*

There are only two records, from Aqaba in April 2013 (via HBW Alive) and an adult and two juveniles at Jordan valley in June 2015 (Harrison 2016), which probably bred nearby or in adjacent Israel. However, with the recent expansion in Israel, including areas along the border with Jordan, more records are to be expected soon.

#### *Kuwait*

It is regarded as a rare visitor, first recorded in 2002, and subsequently with 21 records in 2002-14 (Mike Pope in litt). No information is given on the subspecies recorded in Kuwait but it is likely that most if not all have been *vociferus*.

#### *Lebanon*

There are two old records from December 1863 and September 1954 (Ramadan-Jaradi et al 2008).

A third one is from Harar in December 2013, when a *vociferus* was trapped by a hunter and then released (Ramadan-Jaradi & Serhal 2014).

#### *Oman*

There are two early records from Dhofar region in south-western Oman but the exact dates are not known (Jennings 2010). They were *caeruleus*, which probably strayed from its breeding areas in Yemen. More recently, another 18 were recorded between 1992 and the end of 2015, with a marked influx in 2014-15 (seven records in January-March and October-November; Jens Eriksen in litt). Photographs of the most recent individuals are not available but those that we were able to obtain were of *vociferus*. It is interesting to note that the most recent record, near Barka in October 2015, involved a pair showing territorial behaviour (Jens Eriksen in litt). We speculate that breeding in Oman will begin in the near future or is already taking place.

#### *Qatar*

There have been four records: the first one in 2008, and another three until late 2014, all between



6 Black-winged Kite / Grijze Wouw *Elanus caeruleus caeruleus*, Zichow, Brandenburg, Germany, 29 June 2016 (Zbigniew Kajzer)



7 Black-winged Kite / Grijze Wouw *Elanus caeruleus caeruleus*, Zichow, Brandenburg, Germany, 3 July 2016 (Steffen Fahl)

August and November (Neil Morris in litt). From the photographs available it is clear that, as expected, they were all *vociferus*.

#### *Saudi Arabia*

Jennings (2010) mentions two old records from before 1984 near Jeddah and Taif, and another two records in far south-western Saudi Arabia. All of these were apparently of *caeruleus*. There are six recent records from northern, central and eastern Saudi Arabia in 2012-15 (between March-May and September-November), all of *vociferus*. There are seven recent records from south-western Saudi Arabia but in that part of the country it should perhaps be regarded as a regular but rare visitor; of all the recent records there, only the most recent one in 2015 was identified as *caeruleus* but it is likely that all seven were of this subspecies (Jem Babbington in litt).

#### *Turkey*

Until 2009, Black-winged Kite was regarded as a vagrant with only 12 records (Kirwan et al 2008, Karakaş 2012). Since 2009, 10s of individuals have been recorded in a dramatic influx, mainly in

south-eastern Turkey. In spring 2013, it was found breeding there for the first time. The current breeding population is estimated at three to 10 pairs (Murat Bozdoğan & Soner Bekir in BirdLife International 2015). Most, if not all, recent records have involved *vociferus* (Kirwan et al 2014).

#### *United Arab Emirates*

The species is still classified as a vagrant, with 23 records until early 2016. Since November 2012, there have been 10 records, so the frequency of records has apparently increased. All birds identified to subspecies were *vociferus* (Nick Moran in litt).

#### *Yemen*

The species was a regular but scarce breeder in south-western Yemen until the 1990s (Jennings 2010) but the situation since the late 1990s is not known. It is likely that all Black-winged Kites in Yemen are *caeruleus* (Guy Kirwan & Richard Porter in litt).

#### **Status in North Africa**

The population inhabiting the northern part of



**8** Black-winged Kite / Grijsze Wouw *Elanus caeruleus caeruleus*, Geel-Mosselgoren, Antwerpen, Belgium, 7 June 2016 (*Kris De Rouck*)



**9** Black-winged Kite / Grijsze Wouw *Elanus caeruleus caeruleus*, juvenile, Maashorst, Noord-Brabant, Netherlands, 4 August 2015 (*Michel Veldt*)

Africa is *caeruleus*, although records of *vociferus* in Egypt cannot be ruled out.

#### *Algeria*

A small population occurs in the hills around Algiers, in the Mitidja lowlands and along the coast eastwards to the Oued Isser (Isenmann & Moali 2000).

#### *Egypt*

It is a fairly common breeding species in cultivated fields in the Nile valley and Faiyum but less common in the Nile delta (Goodman & Meininger 1989, Meininger 1991, Horner & Megalli 1992). In March 2009, two birds (probably a pair) were photographed in Dakhla Oasis, Western Desert (Enno Ebels in litt). In recent years, it was found in an oasis in this region where it probably breeds (Jens Hering in litt).

#### *Libya*

Surprisingly, there have been only two records (involving six birds), from April 1998 and February 2011 (Isenmann et al 2016).

#### *Morocco*

It is an uncommon and local resident, breeding regularly in the northern, central and eastern Atlantic plains, in Souss, and also irregularly in Western Sahara. The population has probably increased slightly and is currently estimated at c 500 pairs (Thevenot et al 2003; Patrick Bergier in litt).

#### *Tunisia*

It was formerly widespread in small numbers from Cape Bon to Tabarka and declined rapidly in 1975-

90. This was followed by a slow recovery and then, at the turn of the century, a sudden expansion from Cape Bon to the valley of Medjerda (Isenmann et al 2005, Ouni 2007). For example, in 1998-99, 32 pairs were found over an area of 155 km<sup>2</sup> in the Medjerda valley (Ouni 2007).

#### **Discussion**

The range extension of Black-winged Kite in the WP has continued over several decades but in the last 10 years, a conspicuous and strong growth of local populations in Europe and the Middle East has taken place. In France, the population has increased 15 times in the last decade. This probably translates into a significant increase of vagrancy in western Europe during the same period. Such a spectacular increase in the breeding population has also occurred in Israel, from one pair to c 150 pairs during only five years, but has not been recorded in any other regional populations of the species. The population in Turkey is exhibiting a similar trend, though not nearly at such an impressive rate. Growth or stable trends are usual in most countries of the WP; this applies to both breeding populations and vagrancy, and to both subspecies. Therefore, we can expect a further expansion of the breeding population's range, both in Europe (eg, to eastern and northern France) and the Middle East (eg, to northern Turkey and beyond?), as well as a further increase in vagrancy outside the breeding areas.

#### *Factors affecting expansion and range extension*

Black-winged Kite is a nomadic and irruptive species, capable of dispersing over long distances between its natal areas and first breeding sites, which could be the first step in the colonisation of new





**10** Black-winged Kite / Grijze Wouw *Elanus caeruleus caeruleus*, adult female (collected at Olbramovice, Jihomoravský, Czechia, on 31 March 1938), National Museum, Prague, Czechia, July 2015 (Jiri Sirek)

areas (Negro et al 2006). The main reasons for range extension and population increase in the WP are land-use change and the associated higher density of rodents (Mañosa et al 2005, Ballbontín et al 2008, Karakaş 2012). Black-winged Kite is thought to specialise in rodents, which usually make up more than 95% of its diet (Mendelsohn & Jaksić 1989). Its population densities and breeding performance are largely dependent on rodent abundance and availability. Ballbontín et al (2008) suggested that the species may have taken advantage of the gradual increase of cultivated parklands in Spain (known as *dehesas*) in the second half of the 20th century to expand its range there. This particular type of *dehesas* (eg, characterised by a low density of trees) is structurally similar to African savannahs and may offer a higher density of rodents than other traditional habitats.

Unlike most raptors, the species can raise two broods per year; moreover, it may breed at virtually any time of year, as has been reported from, eg, the Iberian peninsula (Ferrero et al 2003, Negro et al 2006). In Israel, the species performs its breeding cycle at an even more exceptional rate. Typically, breeding pairs manage four or five breeding cycles a year, almost all year round. It has often been observed that a pair feeding its fledglings was already nest-building and mating in readiness for the next cycle. Moreover, breeding success in Israel is apparently high, as pairs typically fledge three or four juveniles per cycle (Yoav Perlman pers obs; David Raved pers comm). Such exceptional breeding behaviour probably resulted in the fast growth rate in Israel but it is unclear whether the colonisation involved individuals that

hatched in Israel or whether immigration of new individuals from outside Israel contributed as well. The ecological processes that allowed this colonisation in Israel, and in Turkey, are unclear, contrary to the range expansion and increase in south-western Europe that is linked to land-use change.

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### Samenvatting

**GRIJZE WOUWEN IN DE WP: TOENAME IN BROEDPOPULATIE, AANTAL DWAALGASTEN EN BROEDGEBIED** Dit artikel beschrijft de status van Grijze Wouw *Elanus caeruleus* als dwaalgast in het West-Palearctische gebied (WP) en bespreekt de factoren die waarschijnlijk ten grondslag liggen aan de populatiegroei en gebiedsuitbreiding van deze soort. In Europa (nominat *caeruleus*), werden de eerste broedgevallen vastgesteld in Portugal in 1944, in Spanje in 1973 en in Frankrijk in 1990. Binnen enkele decennia nam de Europese populatie snel toe tot 1000-2500 broedparen op het Iberisch Schiereiland en 130-150 paren in Frankrijk. Dit vertaalt zich waarschijnlijk in de significante toename als dwaalgast in westelijk Europa tijdens dezelfde periode. Tot het eind van 2016 zijn 143 Grijze Wouwen waargenomen in Europa buiten de broedgebieden; 88 hiervan waren in België, Duitsland, Nederland en Zwitserland. Er zijn twee pieken in het seizoenspatroon van deze dwaalgasten: een opvallende piek in april en een kleinere in augustus. In het Midden-Oosten zijn de lokale populaties (van de Aziatische ondersoort *E c vociferus*) ook dramatisch toegenomen, vooral in Israël (van één paar in 2011 tot c 150 paren in 2016), met minder sterke toenames in Irak, Iran en Turkije. Groeiende en stabiele trends zijn gebruikelijk in de meeste landen van de WP, zowel voor broedpopulaties als dwaalgasten, en voor beide ondersoorten. De belangrijkste oorzaken van deze gebiedsuitbreiding en populatietoename in de WP zijn veranderingen in landgebruik en de bijbehorende

hogere dichtheden van knaagdieren. De succesvolle kolonisatie van nieuwe broedgebieden komt waarschijnlijk door dispersie over grote afstanden waarbij de soort weet te profiteren van lokale 'knaagdierplagen', met als resultaat dat ze in staat zijn om meerdere legfels per jaar te produceren. Ten slotte is het nuttig om de verschillen tussen beide ondersoorten kort te benoemen, omdat *vociferus* in (Zuid-)Oost-Europa kan opduiken als dwaalgast. Het belangrijkste kenmerk betreft (in alle kleden) de tekening op de ondervleugel: bij *caeruleus* zijn de armpennen wit of bijna wit, terwijl deze bij *vociferus* donkergruis zijn met een opvallende lichte achterrand (dat laatste vooral bij adulte vogels).

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APPENDIX 1 Records of Black-winged Kite *Elanus caeruleus caeruleus* in Europe (outside France, Portugal and Spain) to end of 2016; records marked with asterisk (\*) await acceptance by relevant rarities committee (historical records based on Kleinschmidt 1897, Handrinos & Akriotis 1997, Brichetti & Fracasso 2003; records from Bulgaria according to Nankinov 2001 and Bojidar Ivanov in litt; other records come from archives of various rarities committees; see also three comments below table)

*Austria (3)*

24 May 1986, Lauterach, Vorarlberg  
23 September to 22 October 2003, border area with Czechia, Oberösterreich (same individual as in Czechia)  
8 November 2015, Kirchdorf/Inn, Oberösterreich (same individual as in Germany)

*Belgium (22)*

27-28 April 1992, Thuillies, Hainaut  
29-30 March 2005, Thoricourt, Hainaut  
21 April 2005, Mechels Broek, Mechelen, Antwerpen  
2 September 2007, Honnay, Namur  
4 August 2009, Groot Schietveld, Brecht, Antwerpen  
3 April 2010, Lier, Antwerpen  
11 April 2010, Antwerpen  
19 April 2010, Tessenderlo, Limburg  
28-29 June 2010, Montenaken, Limburg  
13 August 2012, Ortho, Luxembourg  
22 September 2012, Averbode Bos en Heide, Tessenderlo, Limburg  
30 July 2013, Doel, Oost-Vlaanderen  
21 October 2013, Heihoek, Lichtervelde, West-Vlaanderen  
15-16 September 2014, Rupelmonde, Oost-Vlaanderen  
8 May 2015, Thommen, Liège  
20 August 2015, Harsin, Luxembourg  
10-11 November 2015, Doel, Oost-Vlaanderen (same individual as in the Netherlands on these dates)  
14-15 April 2016, Lummen, Limburg  
25 April 2016, Oudenaarde, Oost-Vlaanderen  
24 May to 1 July 2016, Geel-Mosselgoren, Antwerpen  
\*12 August 2016, Doel, Oost-Vlaanderen  
\*11 November 2016, Angreau, Hainaut

*Bulgaria (10/11 individuals)*

2 May 1976, Krumovgrad, Kardzhali  
1978, Kaliakra, Dobrich  
12 April 1979, Burgas  
24 April 1980, between Glumche and Zimen, Burgas  
26-27 June 1980, Rupite, Blagoevgrad  
winter 1985/86, Pazardjik  
May 1992, Plovdiv  
early April 1994, Potsernentsi, Pernik (two)  
7 May 1998, Rezovo, Burgas  
15 May 2001, Sofia

*Czechia (3)*

31 March 1938, Olbramovice, Jihomoravský (collected)  
26 September to 30 October 2003, Tichá, Jihočeský (same individual as in Austria)  
10 May 2014, Sedlec u Mikulova, Jihomoravský

*Denmark (13)*

29-30 March 1998, Skagen, Nordjylland  
15-16 May 2005, Skagen, Nordjylland  
16 April 2007, Skagen, Nordjylland  
18 April 2012, Gilbjerg Hoved, Sjælland  
23 April 2013, Skagen, Nordjylland  
28 August 2013, Køge, Sjælland  
22 April 2014, Vibæk, Syddanmark  
23 April 2015, Bødkehøsten, Møn  
9 June 2015, Mandehoved, Sjælland  
24 August 2015, Hjerl Hede, Midtjylland  
\*10 June 2016, Skagen, Nordjylland  
\*22 July 2016, Gedser and Saksfjed Indæmning, Sjælland  
\*15 September 2016, Gedser, Sjælland

*Germany (31/32 individuals)*

24 November 1828, Pfungstadt, Hessen (collected)  
May 1848, Kühkopf, Hessen (collected)  
11 August 1984, Ludweiler, Saarland  
19 April 1987, Ober-Ramstadt, Hessen (two)  
1 June 1989, Cleverns, Niedersachsen  
11 May 1990, Schwittersum, Niedersachsen  
10 May 1995, Storbeck, Brandenburg  
23 April 1996, Reußenköge, Schleswig-Holstein  
4 July 1998, between Ulmbach, Rabenstein and Rebsdorf, Hessen  
30 April to 10 May 2003, Maiberger Wiesen, Brandenburg  
2-5 November 2003, Radolfzeller Aachried, Baden-Württemberg  
19-23 March 2010, Reuters, Hessen  
26-27 April 2010, Fronhausen, Hessen  
22-25 August 2010, Westendorf, Nordrhein-Westfalen  
13 May 2012, Scharbeutz, Schleswig-Holstein  
1 August 2013, Grüner Brink/Fehmarn, Schleswig-Holstein  
19 March 2014, Holnstein, Bayern  
27 March 2015, Hennef-Stadt Blankenberg, Nordrhein-Westfalen  
13 April 2015, Strohn, Rheinland-Pfalz

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- 26 July to 9 August 2015, NSG Galgenberg-Milzgund, Thüringen  
17 August 2015, Holnstein, Bayern  
24 August 2015, Wahlheim, Rheinland-Pfalz  
4-9 November 2015, Aigen am Inn, Bayern; 12 November 2015, Lohr am Main, Bayern; 13-14 November 2015, NSG Mittlere Horloffau, Hessen (the same individual as in Austria)  
\*9 April 2016, Märkisch Luch, Brandenburg  
\*20 April 2016, Schöneberg, Bayern  
\*22 April 2016, Greifswalder Oie, Mecklenburg-Vorpommern  
\*1 June to 25 August 2016, Randowbruch, Brandenburg  
\*4-5 August 2016, Möckern-Rosian, Sachsen-Anhalt  
\*5 October 2016, Irschenberg, Bayern  
\*12-13 October 2016, NSG Freiburger Rieselfeld, Baden-Württemberg  
\*16-19 November 2016, Neuried, Baden-Württemberg; 26 November to 2 December 2016, Ottenheim, Baden-Württemberg (probably same individual)
- Greece (9/10 individuals)*  
end of April 1830s, exact location unknown (two; collected)  
14 December 1987, Agia Triada Irakleiou, Crete  
6 November 1999, Rodia, Arta  
7 February 2002, Neohori, Arta  
22 October 2004, Mesologi, Aitolookarnania  
9 April 2005, Oinofyta, Voiotia  
1 December 2006, Mesologi, Aitolookarnania  
24 March 2008, Kohlias, Aitolookarnania  
11 January 2009, Aitoliko, Aitolookarnania
- Hungary (1)*  
22-27 August 2012, Csákvár, Fejér
- Italy (11/12 individuals)*  
20 October 1893, Lombardore, Piedmont (collected)  
autumn 1969, Crati river valley, Calabria  
22 November 1974, Catanzaro, Calabria  
24 April 2000, Mount Conero, Marche (two)  
28 March to 5 April 2009, Bolzano airport, Alto Adige  
5 April 2010, Morgano, Veneto  
29 September 2010, Cosoleto, Calabria  
\*2 May 2012, Pianezza, Piedmont  
22 February to 15 March 2015, Maniago, Friuli Venezia Giulia  
\*29 September to 11 November 2015, Agnellengo, Piedmont  
\*27 December 2015 to 19 February 2016, Cava di Montanaro and Cuneo, Torino
- Luxembourg (1)*  
4 and 16 October 2016, Saeul, Redange
- Netherlands (20)*  
31 May 1971, Knardijk, Flevoland  
29-31 March 1998, De Cocksdorp, Texel, Noord-Holland  
4 June to 23 August 2000, Bargerveen, Drenthe  
22 May 2009, Oud-Alblas, Zuid-Holland  
7 April 2010, Nijmegen, Gelderland  
12-13 April 2012, Keent, Noord-Brabant and Wijchen, Gelderland  
19-20 May 2012, Wageningen, Gelderland and Rhenen, Utrecht  
17 October 2014, Buttervlietpolder, Zuid-Holland  
25 May 2015, Drogeham, Friesland  
3-5 August 2015, Maashorst, Noord-Brabant  
20-21 August 2015, Marnewaard, Lauwersmeer, Groningen  
25 October 2015, Vianen, Utrecht  
\*30 October 2015, Vlieland, Friesland  
6-18 November 2015, Kootwijkerveld, Gelderland  
10-11 November 2015, Emmadorp, Zeeland (same individual as in Belgium on these dates)  
4 April 2016, Castricum, Noord-Holland  
\*10 April 2016, Den Oever, Noord-Holland  
10 June 2016, Luntershoek, Zeeland  
\*23 August 2016, Maashorst, Noord-Brabant  
27 August 2016, Wierdense Veld, Overijssel
- Poland (1)*  
8 May 2016, Rewa, Pomorskie
- Slovakia (1)*  
15 August 2012, Žitavský luh nature reserve, Nové Zámky
- Sweden (4)*  
26-28 April 2004, Sällstorp and Balgö, Halland  
21-24 April 2012, Tranebo, Dumme mosse, Småland; 11-23 August 2013, Skånum, Västergötland; 5 June 2015, Dumme mosse, Småland (same individual)  
29 April 2014, Film, Uppland; 26 May 2014, Falsterbo, Skåne (the same individual)  
12 September 2016, Falsterbo, Skåne
- Switzerland (16)*  
29 April 1990, Cartigny, Genève  
30 October 1994, Kaltbrunner Riet, St Gallen  
15-16 July 2003, Altikon, Zürich  
15 July 2006, Köniz, Bern  
3 August to 10 November 2008, Avusy and Laconnex, Genève (ringed)  
3 April 2009, Neeracherried, Zürich  
2 August 2009, Orbe, Vaud  
30-31 March 2010, Laconnex, Genève  
2 August 2010, Wauwilermoos, Luzern; 4 August 2010; Kaltbrunner Riet, St Gallen (same individual)  
6 June 2012, Kaltbrunner Riet, St Gallen  
25 August 2012, Untervaz, Graubünden  
16 October 2012, Boudevilliers, Neuchâtel  
18-22 November 2012, Meinsberg, Bern  
30 October 2014, Schwerzenbach, Zürich  
14 October 2015, Schönenbuch, Basel-Land  
18 October 2016, Rothrist, Aargau
- Comment 1: there are two reports from Romania (1844 and 1965) but neither is adequately documented, so they have not been accepted (Szilard Daroczi in litt)  
Comment 2: a bird found as a roadkill at Hazeldonk, Noord-Brabant, Netherlands, on 24 October 1992 was not accepted, because the identity of the finder is unknown (van den Berg & Bosman 2001)  
Comment 3: a bird recorded at Leipheimer Donaumoos, Bayern, Germany, on 6 December 1994 is treated as a probable escape (Peter Barthel in litt)