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Source: *Ardea*, 97(4) : 503-514

Published By: Netherlands Ornithologists' Union

URL: <https://doi.org/10.5253/078.097.0415>

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# Distribution of owls in Syria

Adwan H. Shehab<sup>1,\*</sup> & David H. Johnson<sup>2</sup>

Shehab A.H. & Johnson D.H. 2009. Distribution of owls in Syria. In: Johnson D.H., Van Nieuwenhuyse D. & Duncan J.R. (eds) Proc. Fourth World Owl Conf. Oct–Nov 2007, Groningen, The Netherlands. Ardea 97(4): 503–514.

The distribution of owls in Syria was investigated during a larger project to plot the distribution of small mammals in the country. Owl pellets were collected from 92 localities representing most of the habitats in Syria; during this work, seven species of owl were observed (Little Owl *Athene noctua*, Barn Owl *Tyto alba*, Eagle Owl *Bubo bubo*, Tawny Owl *Strix aluco*, Striated Scops Owl *Otus brucei*, Eurasian Scops Owl *Otus scops* and Long-eared Owl *Asio otus*). Little Owl and Barn Owl were the most common owls. Owl distributions were mapped based on recent observations and published records. Threats affecting owl populations in Syria include trade for taxidermy or traditional use, secondary poisoning by insecticides and rodenticides and habitat destruction.

**Key words:** *Asio otus*, *Athene noctua*, *Bubo bubo*, *Otus brucei*, *Otus scops*, *Strix aluco*, *Tyto alba*, owls, distribution, cultural beliefs, Syria

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## INTRODUCTION

A number of studies reporting on the owls of Syria have been published within the last three decades (e.g. Pradel 1981, Kock & Nader 1983, Nadachowski *et al.* 1990, Manners & Diekmann 1996, Kock 1998, Shehab *et al.* 1999, 2000, Hutterer & Kock 2002, Shehab 2005, Shehab & Charabi 2005, Shehab *et al.* 2006). Most of these publications were devoted mainly to the systematics, distribution or species diversity of small mammal prey taken by owls, or to determine the role of owls as biological control agents on rodent pests.

The Barn Owl *Tyto alba* is an ideal species to study the remains of mammalian prey in owl pellets (Raczynski & Ruprecht 1974, Andrews 1990), therefore, most of the previous literature focused on this species. Few studies have been conducted on Little Owl *Athene noctua* – despite its wide distribution – since its diet consists mainly of arthropods (Obuch & Křiřtin 2004, Shehab *et al.* 2004). Several papers mention the presence of the Eagle Owl *Bubo bubo* in Syria (Obuch 2001, Shehab 2004, Shehab & Mamkhar 2004, Benda *et al.* 2006, Shehab *et al.* 2007). Obuch (2001) and Benda *et al.* (2006) reported on the presence of Long-

eared Owl *Asio otus* and Tawny Owl *Strix aluco*. Although Baumgart *et al.* (1995) mentioned the presence of ten owl species from Syria, including the first report of Eurasian Scops Owl *Otus scops* in the country, they unfortunately did not include detailed data supporting the presence of some owl species.

This study reports data on owl species recently observed in Syria and their distributions. It also highlights threats facing owls in the country and provides a foundation for national requirements on their conservation.

## METHODS

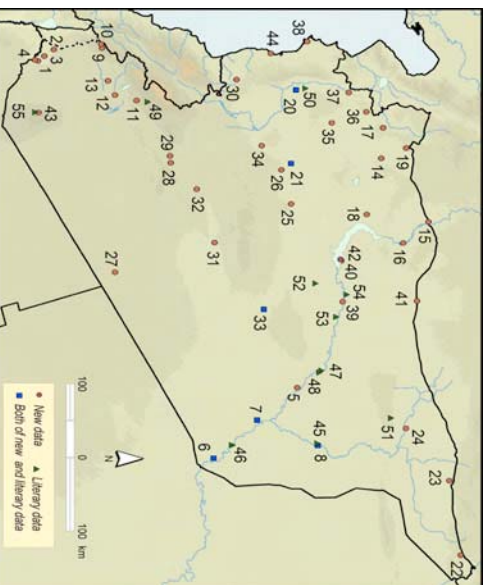
Fieldwork was undertaken from 1995 through 2007. During this period, the distribution of Syrian small mammals and the role of owls as biological control agents of pest species were determined. Thousands of owl pellets of several owl species were collected from 92 localities representing most Syrian habitats. The collected pellets varied in age, from fresh to very old. Many localities were visited more than once; fresh pellets were gathered at each visit, allowing an under-

standing of seasonal patterns of both rodents and owls. Owls were observed during daytime in historical buildings, ruins, caves, cliffs, cellars, traditional water wells and in trees. Additionally, animal markets and taxi-derny shops were inspected for live or dead owls. Owls' feathers, droppings or pellets were helpful in identifying owls when they could not be observed directly. Literature data on owls in Syria were used in addition to our own data.

## RESULTS

### Little Owl

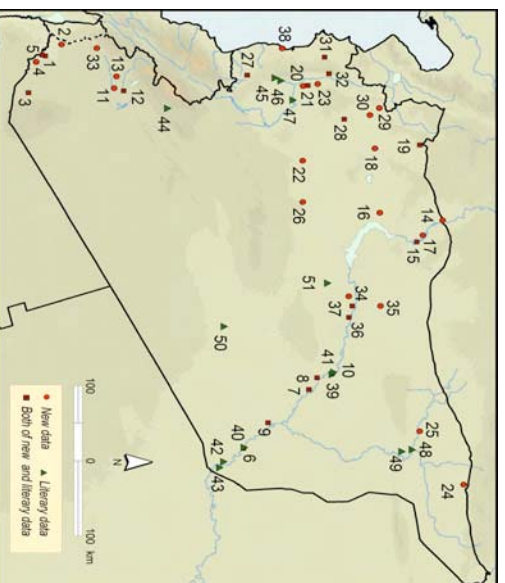
The Little Owl is the most common owl in Syria, with records in 55 locations throughout the country (Fig. 1, Appendix 1). The habit of the Little Owl to nest in burrows and between rocks allows for this species to extend its distribution in most of the eastern and north eastern treeless parts of Syria and it is the only owl species that is known to occur in SE Syria. It is mainly active at night, but it is commonly seen during daytime, on power lines, small hills or large rocks. It roosts in abandoned buildings, ruins, small halls or crevices in mountains or on the ground between rocks. Obuch & Krištin (2004) collected pellets of the Little Owl from 11 localities in Syria at elevations between 190–1400 m. Additionally, Shehab *et al.* (2004) collected pellets from seven localities, and Benda *et al.* (2006) mentioned the Little Owl from four localities in the Euphrates River valley and the Syrian Desert.



**Figure 1.** Locations of Little Owl *Athene noctua* observed in Syria. Numbers refer to the Little Owl list in Appendix 1.

### Barn Owl

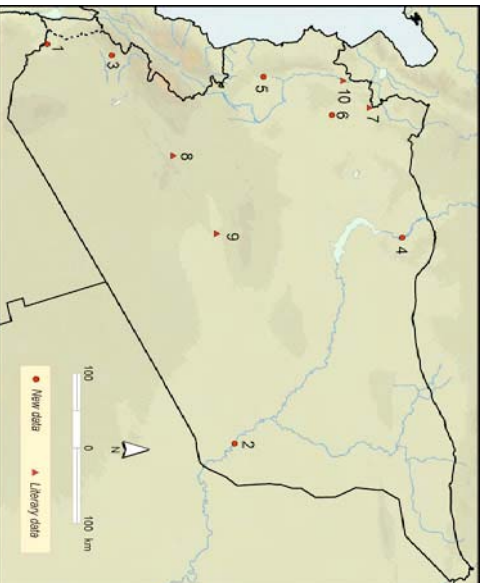
The Barn Owl is common in all parts of Syria, with records in 51 locations in the country (Fig. 2, Appendix 1) including most of the localities where the Little Owl has been observed, with the exception of the extreme desert conditions of the Syrian Badia. It is common along the Euphrates Valley. It roosts in abandoned buildings, ruins, high cliffs, old water wells, grain storage bins, cave entrances and trees. Pellets from Barn Owl have been collected from Crak des Chevaliers (Pradel 1981, Nadachowski *et al.* 1990), as well as many other localities across Syria (Obuch 2001, Shehab *et al.* 2004, Shehab & Charabi 2005, Shehab 2006, Benda *et al.* 2006, Shehab *et al.* 2006). The Barn Owl is suffering from illegal trade and persecution. Several specimens were found for sale (US \$10–20 per owl) in a Damascus animal market. Dead owls have been found at roosts in Homs and Hama Governorates after a rodent control campaign using zinc phosphide was implemented in nearby agricultural areas.



**Figure 2.** Locations of Barn Owl *Tyto alba* observed in Syria. Numbers refer to the Barn Owl list in Appendix 1.

### Eagle Owl

The Eagle Owl is a relatively rare owl in Syria, with only 10 records known (Fig. 3, Appendix 1). It has been recorded from seven localities in the Mediterranean zone, and from three localities in the Syrian Desert. It usually roosts on high cliffs. One live young was captured at a high cliff in Al Yarmouk River Valley in May 2000, suggesting nesting in the area. Another juvenile was captured at Dana, northern Syria (Manners &



**Figure 3.** Locations of Eagle Owl *Bubo bubo* observed in Syria. Numbers refer to the Eagle Owl list in Appendix 1.

Dickmann 1996). The presence of a large number of pellets at Al Qaryateine (Shehab 2004) suggests that the Eagle Owl is a resident in that area. The Eagle Owl is suffering from the impact of illegal hunting and persecution because of local myths. Mummified specimens were observed in a shop at Musyāf. Baumgart *et al.* (1995) mentioned that reports from inhabitants and the regular appearance of stuffed birds in shops indicates the Eagle Owl was widespread – if only in low numbers and only locally. They also added that the mountains in western Syria, south at least to Burgush on the fringes of the Hermon massif, are inhabited by a large dark subspecies (similar to *Bubo bubo bubo* or *Bubo bubo interpositus*), and that a smaller and paler subspecies (*Bubo bubo ascalaphus*) inhabited the heights and river valleys in steppe and desert areas of the interior. Unfortunately, as they did not include precise coordinates for these records, we were not able to include the data in our records.

#### Tawny Owl

There are four records of this owl (Fig. 4, Appendix 1); the distribution seems to be restricted to the forests of the coastal region. The two reports about the presence of Tawny Owl from interior Syria (Baumgart *et al.* 1995) are questionable and additional verification is needed.

#### Striated Scops Owl

The Striated Scops Owl is a rare species in Syria, with only three records from the country (Fig. 4, Appendix 1). Clarke (1924) reported breeding evidence at

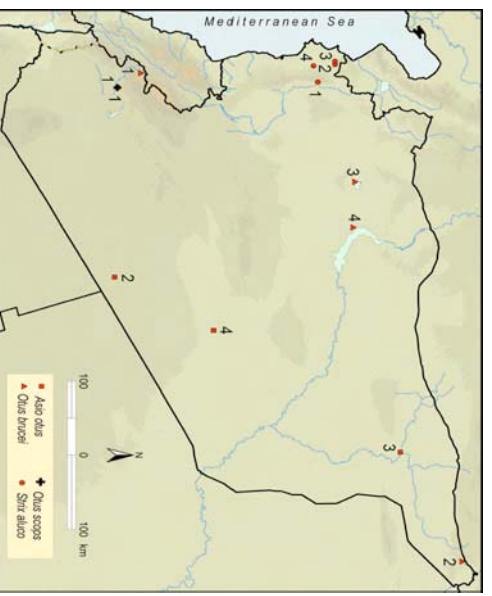
Aleppo. Baumgart *et al.* (1995) noted a single October sighting (23 October 1986) from Tall Shekh Hamad at the Khabur. Evans (1994) reported the owl from Sabkhat al-Jabbul, Halab as a summer visitor and from the Euphrates valley as resident (based on unpublished data, compiled by Dr. I. Hanna for the 'Important Bird Areas in the Middle East' project); these are the only documented records for the species in Syria. Unfortunately, as no specific coordinates were given by Evans (1994) the records are not included in the distribution map of this species.

#### Long-eared Owl

The Long-eared Owl is very rare in Syria, with only four records (Fig. 4, Appendix 1). One injured individual was observed in Damascus. The record of Long-eared owl from Dana village near Bab Al Hawa 40 km west of Halap (Manners & Dickmann 1996) was incorrect, the authors later re-identified that juvenile owl as an Eagle Owl (Guy Manners, pers. comm.).

#### Eurasian Scops Owl

The single record of Eurasian Scops Owl is shown in Fig. 4. By investigating the refrigerators at the animal market in Damascus (7 July 2005), one frozen specimen was found being offered for sale. The owl in the photos was identified as Eurasian Scops Owl by Dr. Mike Evans (pers. comm.). This is the first documented record of the Eurasian Scops Owl from Syria. It is worth noting that Baumgart *et al.* (1995) mentioned that the



**Figure 4.** Locations of four owl species observed in Syria: Long-eared Owl *Asio otus*, Eurasian Scops Owl *Otus scops*, Striated Scops Owl *Otus tristis*, and Tawny Owl *Strix aluco*. Numbers refer to the list in Appendix 1.

Scops Owl is found in Syria both in the northwest (coastal area around Ras el-Basit) and the southwest (breeding report from 26 June 1980 at Qatana; several were heard calling in the spring of 1978 and 1981 in the Damascus Ghouta). They also added that the calling males at Halbun and Slenfe required clarification. Spring passage migrants are recorded from the end of March (29 March 1994, one at the Burgush). Unfortunately Baumgart *et al.* (1995) did not mention precise coordinates for the locations, and therefore those records are not included in the distribution map.

## DISCUSSION

The large area and diversity of natural habitats of the Syrian Arab Republic provides habitat for seven owl species. In addition to these seven owls, a survey may determine whether an eighth species, the Brown Fish Owl *Bubo zeylonensis* is extirpated or not. Although, Baumgart *et al.* (1995) mentioned the presence of ten owl species in Syria, they did not provide further details supporting the presence of *Asio flammeus*, *Strix butleri* and *Asio otus*.

The investigation of owl pellets offers important information on the distribution of mammals, birds and arthropods preyed upon by owls. This technique of mapping animals' distributions based on recoveries from owl pellets comes to a fore when new species are documented for the first time (Shehab *et al.* 1999, 2004, 2006, 2007). Investigations of mammal distribution have often relied on Barn Owl pellets – more than any other species – as it is regarded to have a wide distribution in Syria (Pradel 1981, Kock & Nader 1983, Nadachowski *et al.* 1990, Kock 1998, Shehab *et al.* 1999, 2000, Obuch 2001, Hutterer & Kock 2002, Shehab 2004, Shehab *et al.* 2004, Shehab 2005, Shehab & Charabi 2005, Benda *et al.* 2006, Shehab *et al.* 2006, 2007). An intensive study based on standard survey techniques should be conducted in the future, to resolve the actual distribution of the owl species.

Direct or indirect human activities are among limiting factors for the distribution of owls. The impact of pesticides and rodenticides is suspected to be high, since many owls were found dead in their roosts after local campaigns for rodent control. Many people consider owls as a symbol of pessimism due to their undesirable screeching or visits at night to rural areas. Some local people advise their children to cut off an owl's talons and then release the bird; this is thought to be a strategy to avoid their mystical harm. The Barn Owl is the species most observed in local markets, and suffers

the impact of illegal trade for magical purposes, while the Eagle Owl is usually used in taxidermy due to its large size and unique appearance.

A pioneer project being conducted in northern Syria at the International Center for Agricultural Research in Dry Areas seeks to encourage the breeding of resident raptors in agricultural areas by providing nest boxes in the field. In addition to this, a national program should be implemented to raise the public awareness of the role of owls in nature and to reduce the impact of local myths. Conservation plans should be designed to ensure safe nesting sites for owls and to encourage the owls' reproduction.

## ACKNOWLEDGEMENTS

Many thanks are extended to Prof. Zuhair S. Amr for valuable comments on the manuscript, to Dr. Ahmet Karata kindly draw the distribution maps, to Eng. Khaled Nakhleh and Eng. Mustafa Ozon from GIS department (GCSAR) for help in preparing distribution maps. Also many thanks to Dr. Mike Evans for identifying the Eurasian Scops Owl and for kindly sending us the unpublished data-sheets for Syrian owls as compiled by Dr I. Hanna for the 'Important Bird Areas in the Middle East' project. We especially acknowledge Dries Van Nieuwenhuyse for his valuable help with the Tables.

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- ### SAMENVATTING
- Tijdens een grootschalig onderzoek naar het voorkomen van kleine zoogdieren in Syrië werd tevens de verspreiding van uilen onderzocht. Er werden op 92 plekken braakballen van uilen verzameld. De plekken vormden samen een goede afspiegeling van de habitats in Syrië. Er werden zeven soorten uilen vastgesteld: Steenuil *Athene noctua*, Kerkuil *Tyto alba*, Oehoe *Bubo bubo*, Bosuil *Strix aluco*, Gestreepte Dwergooruil *Otus brucei*, Dwergooruil *Otus scops* en Ransuil *Asio otus*. De Steenuil en Kerkuil waren de meest voorkomende soorten. Op grond van recente waarnemingen en gepubliceerd materiaal wordt de verspreiding van de uilen in Syrië beschreven. De belangrijkste bedreigingen van de uilen zijn handel (om vogels op te zetten of om geneesmiddelen te brouwen), vergiftiging door landbouwbestrijdingsmiddelen en habitatvernietiging.

**Appendix 1.** Owl observations in Syria. The map numbers refer to the marked locations on the maps (Figs 1–4). ad. = adult, ind. = individual, obs. = observation (by the authors when mentioned in recent data), lit. = record from literature.

Governate	Locality	Latitude	Longitude	Data type	No. on map	Comments
<b>Little Owl</b>						
Dar'aa	Al-Mozirieb, 11 km NW Dar'aa	32°41'34"	36°02'28"	obs.	1	several times in 2000, 2001, 2004–07, ads. standing on rocks or power lines
Dar'aa	Ayn Dakar, 40 km W Dar'aa	32°51'37"	35°54'10"	obs.	2	23 July 2000 & 28 August 2004, ads. standing on rocks
Dar'aa	Jel'een (Agr. Res. Station)	32°45'32"	35°58'55"	obs.	3	29 April 1998, ads. on rocks
Dar'aa	Khrab Al-Shaham, 10 km W Dar'aa	32°39'38"	36°01'45"	obs.	4	23 July 2000, photo, 1 couple was captured inside a burrow between rocks
Deyr ez-Zur	Ayn Abu Jum'aa, 13 km W Deyr ez-Zur	35°25'50"	40°01'36"	obs.	5	13 August 2006, 13 March 2007, 17 May 2007 and 13 November 2007, several ads. roosting in cliffs, 210–230 m a.s.l.
Deyr ez-Zur	Mari (Tel el-Hariri)	34°33'05"	40°53'18"	obs.	6	22 May 2000 and 13 November 2007, 1 ad. roosting in the ruins
Deyr ez-Zur	Qala'at er-Rahba, 50 km E Deyr ez-Zur	35°00'17"	40°25'23"	obs.	7	13 March 2007 and 13 November 2007, several ads. in the castle, 241 m a.s.l.
Deyr ez-Zur	Tall Sheikh Hamad	35°39'01"	40°44'01"	obs.	8	23 May 2000, ads. standing on rocks or on power lines
Deyr ez-Zur	As' Suwar	35°38'48"	40°42'31"	lit.	45	280 m a.s.l., 18 April 2001, pellets from a settlement on the right shore of the Khabur River, an abandoned building (Obuch & Krištín 2004)
Deyr ez-Zur	As' Salihyyah (Dura Europus), 95 km SE Deyr ez-Zur	34°44'58"	40°43'42"	lit.	46	200 m a.s.l., 19 April 2001, pellets at rocks under a Roman fortress, above Euphrates River (Obuch & Krištín 2004)
Deyr ez-Zur	Halabiyyeh, S-bank Euphrates, 50 km W Deyr ez-Zur	35°41'25"	39°49'13"	lit.	47	270 m a.s.l., 15 April 2001, pellets under walls of a fortress ancient ruins on the right shore of the Euphrates River (Obuch & Krištín 2004)
Deyr ez-Zur	Zalabiyeh, 5 km E Halabiyyeh	35°40'07"	39°50'31"	lit.	48	280 m a.s.l., 15 April 2001, pellets under walls of a Roman fortress ancient ruins on the left shore of the Euphrates River (Obuch & Krištín 2004)
Deyr ez-Zur	Mari (Tel el-Hariri)	34°33'05"	40°53'18"	lit.	6	190 m a.s.l., 18 June 1996, pellets at an archaeological excavation (Obuch & Krištín 2004)
Deyr ez-Zur	Qala'at er-Rahba, 50 km E Deyr ez-Zur	35°00'17"	40°25'23"	lit.	7	240 m a.s.l., 21 April 2001, pellets at rocks of the Arabian castle 1 km from a town (Obuch & Krištín 2004)
Deyr ez-Zur	Tall Sheikh Hamad	35°39'01"	40°44'01"	lit.	8	280 m a.s.l., 19–20 June 1996 & 18 April 2001, pellets from archaeological excavations on the left bank of the River Khabur (Obuch & Krištín 2004)
Dimashk (Sham)	2 km NE Arna (Hermon Mountain)	33°22'17"	35°53'02"	obs.	9	3 June 1998, 1 ad., pellets
Dimashk (Sham)	5 km W Arna (Hermon Mountain)	33°21'44"	35°50'13"	obs.	10	3 October 1998, 1 ad., pellets
Dimashk (Sham)	Hele, 40 km N Damascus	33°44'16"	36°31'28"	obs.	11	26 April 2004, 1 ad. and 7 chicks from a nest in a rocky area
Dimashk (Sham)	Kharabow, 20 km E Damascus	33°30'30"	36°27'30"	obs.	12	25 June 2000, 19 April–May 2007, ads. on trees and on buildings
Dimashk (Sham)	Sbieneh, 8 km S Damascus	33°26'01"	36°17'03"	obs.	13	Routinely seen during the period 1995–2007, active ads. during daytime
Dimashk (Sham)	Maalula	33°51'31"	36°32'32"	lit.	49	a limestone canyon, 1 km S of town, stony semi-desert, 1400 m a.s.l., 30 April 2001, pellets (Obuch & Krištín 2004)
Halap	Babennes (Agric. Res. Station)	36°19'17"	37°13'44"	obs.	14	5 July 2000, ads. on trees
Halap	Jarablus	36°49'17"	38°00'11"	obs.	15	4 July 2000, ads. standing on rocks and on power lines along the street
Halap	Qala'at Nejm, 110 km NE Halap	36°33'17"	38°15'44"	obs.	16	4 July 2000, 1 ad. roosting in the ruins
Halap	Qala'at Sam'aan, 30 km W Halap	36°20'30"	36°51'23"	obs.	17	3 July 2000, 1 ad. standing on rocks
Halap	Qasr Sallum, 70 km E Halap	36°10'03"	37°54'49"	obs.	18	10 August 2006, 1 ad. roosting in the ruins, 390 m a.s.l.



Governate	Locality	Latitude	Longitude	Data type	No. on map	Comments
<b>Little Owl</b> continued						
Halap	Yahmool (Agric. Res. Station	36°35'07"	37°06'14"	obs.	19	3 July 2000 & 7 August 2004, ads. standing on rocks, power lines, buildings or on trees
Hama	Qala'at al-Madik, 55 km NW Hama	35°25'06"	36°23'40"	obs.	20	31 July 1998 and 5 August 2004, ads. standing on rocks at daytime
Hama	Qasr "Kasr" Ibn Wardan	35°21'54"	37°17'32"	obs.	21	2 July 2000, ads. roosting in the ruins or standing on rocks near the ruins
Hama	Qala'at al-Madik, 55 km NW Hama	35°25'06"	36°23'40"	lit.	20	pellets (Shehab <i>et al.</i> 2004)
Hama	Qasr Ibn Wardan	35°21'54"	37°17'32"	lit.	21	2005, pellets from ruins of Byzantine church (Benda <i>et al.</i> 2006)
Hama	Shah` Ranar, 2 km NW al'Hamra	35°31'14"	36°22'33"	lit.	50	pellets (Shehab <i>et al.</i> 2004).
el-Haseke	As' Salha, 4 km SW Al Malekiah	37°09'44"	42°04'19"	obs.	22	19 May 2002 and 12 July 2005, several ads. on rocks
el-Haseke	Heymu, (Agri. Res. Center), 5 km W el-Kamishli	37°02'31"	41°09'45"	obs.	23	23 May 2000, ads. nesting inside unused power poles made of concrete laid on ground, also pellets , 6 July 2005, pellets , 6 July 2007, ads. standing on power lines
el-Haseke	Tall Baydar, 39 km NW el-Haseke	36°34'59"	40°31'30"	obs.	24	6 July 2005, 1 ad. standing on a hill at daytime
el-Haseke	Qal'aat Sukkara, 2 km SW Jebel Abdul Aziz	36°25'40"	40°23'54"	lit.	51	pellets (Huttere & Kock 2002, Shehab <i>et al.</i> 2004)
Homs	Asria	35°22'03"	37°47'09"	obs.	25	21 May 2000 and 14 November 2007, several ads. standing on hills at the street's sides, also pellets from Asria ruins
Homs	As' Sa'an	35°15'51"	37°22'14"	obs.	26	21 May 2000 and 14 November 2007, several ads. standing on hills at the street's sides at midday
Homs	At -Tanf	33°30'28"	38°37'12"	obs.	27	June 2001, ads. standing on small hills at the street sides at midday
Homs	15 km SE Qaryatein (Al Qaryateine)	34°05'53"	37°17'02"	obs.	28	1 August 2001, several ads. on rocks
Homs	Mahassa (15 km SW Al Qaryateine)	34°05'25"	37°12'02"	obs.	29	15 December 2004, & photo, 1 ad. standing on the street in the early morning
Homs	60 km W Qala'at al-Husun	34°47'18"	36°16'10"	obs.	30	1997, 1998, 1999, 2000, 2001, 2004, 2005, 2006, active ads. each time while visiting this location
Homs	Qala'at Fakhraddin el-Mani, 3 km W Tadmur (=Palmyra)	34°33'45"	38°15'26"	obs.	31	15 August 2006, 1 ad., 560 m a.s.l.
Homs	Qasr al Heer "al Hayr" Al Gharbi	34°22'27"	37°36'21"	obs.	32	2 August 2001, 1 ad.
Homs	Qasr al Heer "al Hayr" Al Sharqi	35°04'34"	39°04'16"	obs.	33	2 August 2001, 1 ad.
Homs	Tall Senan	35°03'19"	37°04'33"	obs.	34	21 May 2000, 1 ad. nesting in a rural house was shot by a farmer, several ads. were standing on hills by road edge, or perched on powerlines at midday
Homs	Qasr al Heer "al Hayr" Al Sharqi	35°04'34"	39°04'16"	lit.	33	280 m a.s.l., 21 April 2001, pellets from the ruins of the Arabian hunting-lodge in the desert, (Obuch & Kristin 2004).
Idlib	Ebla ruins (Tall Mardikh-Ebla), 26 km SE Idlib	35°47'54"	36°47'52"	obs.	35	3 August 1998, 30 September 1998, 17 February 1998, 2 July 2000 and 5 August 2004, ads. roosting in the ruins, also pellets
Idlib	Kafer Darian ruins	36°09'49"	36°39'49"	obs.	36	April 1997 and 3 July 2000, ads. roosting in the ruins
Idlib	Khrab Sultan	35°58'36"	36°25'40"	obs.	37	31 July 1998 and 28 September 1998, ads. on rocks at daytime
el-Ladhikiye	Booqa (Agric. Res. Center)	35°32'13"	35°48'19"	obs.	38	10 September 2004, 1 ad. in a tree
ar-Raqqa	Fekhaykha, 5 km SW ar-Raqqa	35°54'46"	38°58'47"	obs.	39	3 March 2007, 1 ad. roosting at the agricultural research center
ar-Raqqa	Qala'at Ja'abar, ar-Raqqa	35°53'48"	38°28'53"	obs.	40	July 1998, 1 ad.
ar-Raqqa	Tall Abiad, 90 km N ar-Raqqa	36°42'01"	38°58'11"	obs.	41	At the Syrian-Turkish border, 12 August 2006, 1 ad. standing on a small rock



Governate	Locality	Latitude	Longitude	Data type	No. on map	Comments
<b>Little Owl</b> continued						
ar-Raqqa	Tall Abu Huriera	35°51'26"	38°29'04"	obs.	42	11 March 2001, 1 ad. also pellets from the ruins, near the guesthouse of Al Thawra Reserve
ar-Raqqa	Ar` Rasafeh	35°37'41"	38°45'22"	lit.	52	310 m a.s.l., pellets (Shehab <i>et al.</i> 2004); 14 April 2001, pellets at ruins of a town (Obuch & Kristín 2004)
ar-Raqqa	El-Ukershe, 12 km SE ar`Raqqa	35°50'49"	39°09'53"	lit.	53	Euphrates Valley; pellets (Shehab <i>et al.</i> 2004)
ar-Raqqa	Hirquleh, 5 km W ar-Raqqa	35°57'31"	38°53'31"	lit.	54	pellets (Shehab <i>et al.</i> 2004)
Suweida	Ayn Arab (Agric. Res. Center)	32°41'53"	36°40'17"	obs.	43	27 April 1998, ads. on rocks
Suweida	10 km E Rashid	32°40'01"	36°40'01"	lit.	55	1000 m a.s.l., 26 April 2001, pellets in basaltic rocks in black desert (Obuch & Kristín 2004)
Tartus	Qala'at al-Marqab, 45 km N Tartus, (near Bāniyās)	35°09'03"	35°56'58"	obs.	44	23 January 2006, 1 ad. roosting in the castle's cellar
<b>Barn Owl</b>						
Dar'aa	Al-Mozirieb, 11 km NW Dar'aa	32°41'34"	36°02'28"	obs.	1	several times on 2000, 2001, 2004, 2005, 2006, 2007, ads. in a warehouse in Al-Mozirieb Cow farm, also pellets, each visit to this location
Dar'aa	Al-Mozirieb, 11 km NW Dar'aa	32°41'34"	36°02'28"	lit.	1	17 May 2000, pellets coll. from a warehouse in Al-Mozirieb Cow farm (Shehab 2005)
Dar'aa	Ayn Dakar, 40 km W Dar'aa	32°51'37"	35°54'10"	obs.	2	28 August 2004, 1 ad. roosting in the mosque minaret
Dar'aa	Bosra	32°31'04"	36°28'52"	obs.	3	21 November 2006, pellets coll. at the northern side of the Roman amphitheater
Dar'aa	Bosra	32°31'04"	36°28'52"	lit.	3	26 April 2001, pellets coll. from citadel ruins (Benda <i>et al.</i> 2006)
Dar'aa	Dar'aa Dam	32°35'48"	36°06'45"	obs.	4	2 October 2004, 1 ad. roosting in a cliff and many pellets coll. under that roost
Dar'aa	Khrab Al-Shaham, 10 km W Dar'aa city	32°39'38"	36°01'45"	obs.	5	1998, 1 ad. roosting inside a historical collective grave excavated in the southern slopes of the valley; 23 July 2000, pellets coll. from a small cave in southern slopes near the village
Dar'aa	Khrab Sultan	35°58'36"	36°25'40"	lit.	5	16 May 2000, 1 alive ad. and 1 dead, pellets coll. from a cave at the northern slope of Al Yarmouk river valley near the village (Shehab 2005)
Deyr ez-Zur	As' Salihyyah (Dura Europus), 95 km SE Deyr ez-Zur	34°44'58"	40°43'42"	obs.	6	2001, 1 March 2004, 28 March 2006 and 12 November 2007, several ads. in the ruins also pellets coll. under the roosts
Deyr ez-Zur	As' Salihyyah (Dura Europus), 95 km SE Deyr ez-Zur	34°44'58"	40°43'42"	lit.	6	17 May 1989, pellets coll. (Shehab <i>et al.</i> 2004); 19 June 1998 & 19 April 2001, pellets coll. from ruins of ancient Dura Europos (Benda <i>et al.</i> 2006); 10 March 2004, pellets coll.
Deyr ez-Zur	Ayn Abu Jum'aa, 13 km W Deyr ez-Zur	35°25'50"	40°01'36"	obs.	7	(210-230m), 13 August 2006, 13 March 2007, 17 May 2007 and 13 November 2007, several inds. roosting in the cliffs, also pellets coll.
Deyr ez-Zur	Ayn Abu Jum'aa, 13 km W Deyr ez-Zur	35°25'50"	40°01'36"	lit.	7	13/14 August 2006, several ads. roosting in the cliffs, pellets (Shehab <i>et al.</i> 2007)
Deyr ez-Zur	El-Mesreb (el-Abhūl), 20 km NW Deyr ez-Zur	35°30'55"	39°53'07"	obs.	8	28 March 2006, 13 August 2006 and 13 February 2007, 1 ad. roosting at el-Abhūl cave entrance, many pellets
Deyr ez-Zur	El-Mesreb (el-Abhūl), 20 km NW Deyr ez-Zur	35°30'55"	39°53'07"	lit.	8	13 August 2006, pellets (Shehab <i>et al.</i> 2007)
Deyr ez-Zur	Qala'at er-Rahba, 50 km E Deyr ez-Zur	35°00'17"	40°25'23"	obs.	9	(241 m), each time between 1997– 12 February 2007, new pellets coll.
Deyr ez-Zur	Qala'at er-Rahba, 50 km E Deyr ez-Zur	35°00'17"	40°25'23"	lit.	9	11 March 1979, pellets coll. by R. Kinzelbach (Kock & Nader 1983, Shehab <i>et al.</i> 2004); 18 and 21 April 2001, pellets coll. from castle ruins (Benda <i>et al.</i> 2006); 22 May 2000, pellets coll. (Shehab <i>et al.</i> 2007)

Governate	Locality	Latitude	Longitude	Data type	No. on map	Comments
<b>Barn Owl continued</b>						
Deyr ez-Zur	Zalabiyeh	35°40'07"	39°50'31"	obs.	10	15 March 2007, pellets coll. at base of cliffs under ancient ruins
Deyr ez-Zur	Zalabiyeh	35°40'07"	39°50'31"	lit.	10	12 March 1980, pellets coll. by R. Kinzelbach (Kock & Nader 1983); 15 April 2001, pellets coll. at rocks under ancient ruins on the northern shore of the Euphrates River (Benda <i>et al.</i> 2006)
Deyr ez-Zur	Al Bas'ah	35°40'31"	39°50'49"	lit.	39	22 June 1998, pellets coll. at rocks above the Euphrates (Benda <i>et al.</i> 2006)
Deyr ez-Zur	As' Salihiyyah valley, 2 km to NW Dura Europos	34°45'32"	40°43'11"	lit.	40	19 April 2001, pellets coll. (Benda <i>et al.</i> 2006)
Deyr ez-Zur	Halabiyeh, S-bank Euphrates, 50 km W	35°41'25"	39°49'13"	lit.	41	31 May 1989, pellets coll. by C. Ebenau, (Kock 1998, Huttere & Kock 2002, Shehab <i>et al.</i> 2004); 7 October 1995, 17 June 1998 and 15 April 2001, pellets coll. from ruins of ancient fortress town on the right shore of the Euphra
Deyr ez-Zur	Mari (Tel el-Hariri)	34°33'05"	40°53'18"	lit.	42	18 June 1998 and 20 April 2001, pellets coll. at an archeological excavation area (Benda <i>et al.</i> 2006)
Deyr ez-Zur	Marshadeh	34°30'31"	40°57'34"	lit.	43	20 April 2001, pellets coll. at rocks above the town (Benda <i>et al.</i> 2006)
Dimashk (Sham)	Karahta (Agri. Ris. Station)	33°24'33"	36°25'33"	obs.	11	19 February 2007, pellets coll. under pine trees
Dimashk (Sham)	Kharabow, 20 km E Damascus city center	33°30'30"	36°27'30"	obs.	12	19 April May 2007, pellets coll. under palm trees
Dimashk (Sham)	Kharabow, 20 km E Damascus city center	33°30'30"	36°27'30"	lit.	12	25 June 2000, pellets coll. from the eastern side of the old building of the Agricultural Institute (Shehab 2005)
Dimashk (Sham)	Sbieneh, 8 km S Dimashk	33°26'01"	36°17'03"	obs.	13	every time during the period 1995-2007, ads. flying at night or vagrant adults at daytime or adults roosting in traditional water wells
Dimashk (Sham)	Yabrud, 60 km N Dimashk	33°58'01"	36°40'01"	lit.	44	27 June 1998, pellets coll. (Obuch 2001)
Halap	Jarablus; at the Syrian-Turkish border	36°49'17"	38°00'11"	obs.	14	4 July 2000, pellets coll.
Halap	Qala'at Nejm, 110 km NE Halap	36°33'17"	38°15'44"	obs.	15	4 July 2000, 1 ad. roosting in the ruins, 12 October 2004, pellets coll.
Halap	Qala'at Nejm, 110 km NE Halap	36°33'17"	38°15'44"	lit.	15	11 August 2006, pellets coll. (Shehab <i>et al.</i> 2007)
Halap	Qasr Sallum, 70 km E Halap	36°10'03"	37°54'49"	obs.	16	(390 m), 10 August 2006, few pellets coll. inside the ruins
Halap	Tall al Amarneh, 110 km NE Halap	36°37'01"	38°11'01"	obs.	17	4 July 2005, photo, 2 ads and 3 juvs were roosting inside a deep hall excavated in the top of hill, also many pellets coll. at the base of the hall (6 m depth)
Halap	Tall Hadia, ICARDA, 30 km S Halap	36°07'05"	37°08'46"	obs.	18	6 July 2006, pellets coll. under a crevice and birds' boxes in the cliff near the maintenance garage of ICARDA
Halap	Yahmool (Agr. Res. Station)	36°35'07"	37°06'14"	obs.	19	14 March 2001, 7 August 2004 and 4 July 2005, pellets coll. under Italian cypress trees
Halap	Yahmool (Agr. Res. Station)	36°35'07"	37°06'14"	lit.	19	3 July 2000, pellets coll. under Italian cypress trees (Shehab & Al Charabi 2006)
Hama	As' Skailbiyeh, 50 km NW Hama	35°22'12"	36°23'58"	obs.	20	12 July 2000, 2 ads. & 4 chicks were captured by a student of Damascus University camping inside chemenae over the ceiling of As' Skailbiyeh secondary school, 8 August 2001, a lot of pellets coll.
Hama	Qala'at el-Madik, 55 km NW Hama	35°25'06"	36°23'40"	obs.	21	31 July 1998 and 5 August 2004, pellets coll.
Hama	Qala'at el-Madik, 55 km NW Hama	35°25'06"	36°23'40"	lit.	21	pellets coll. (Shehab <i>et al.</i> 2004)
Hama	Qasr "Kasr" Ibn Wardan	35°21'54"	37°17'32"	obs.	22	2 July 2000, pellets coll.; Shah' Ranar, NW of al'Hamra [23], 8 August 2001 & 5 July 2004, pellets coll. at base of high cliffs
Hama	Shah'Ranar, NW al'Hamra	35°31'14"	36°22'33"	obs.	23	8 August 2001 & 5 July 2004, pellets coll. at base of high cliffs

Governate	Locality	Latitude	Longitude	Data type	No. on map	Comments
<b>Barn Owl continued</b>						
Hama	Ez-Zawe – Musyāf, 50 km W Hama	35°04'55"	36°18'11"	lit.	45	28 March 2001, pellets coll. (Shehab <i>et al.</i> 2007)
Hama	Mashta Deir Mama	35°08'33"	36°20'12"	lit.	46	1 June 2001, pellets coll. at rocks, (Benda <i>et al.</i> 2006)
Hama	Qala'at Shaizar, 25 km NW Hama	35°16'03"	36°34'01"	lit.	47	26 March 1980, pellets coll. between Shaizar and Mahardea by R. Kinzelbach (Kock and Nader 1983); 1 July 2001, pellets coll. (Benda <i>et al.</i> 2006)
el-Haseke	Heymu (Agri. Res. Center), 5 km W el-Kamishli	37°02'31"	41°09'45"	obs.	24	12 July 2005, pellets coll. from a hayloft
el-Haseke	Tall Baydar, 39 km NW el-Haseke	36°34'59"	40°31'30"	obs.	25	5 July 2005, pellets coll. at the base of an abandoned traditional water well
el-Haseke	Hassake city park	36°30'24"	40°44'46"	lit.	48	20 June 1998, pellets coll. from park on the town edge (Benda <i>et al.</i> 2006)
el-Haseke	Tall al Budairi	36°24'01"	40°46'01"	lit.	49	25 May 1989, pellets coll. from Tall Bderi, E- Banck Khabur by C. Ebenau, (Kock 1998, Huttere & Kock 2002, Shehab <i>et al.</i> 2004)
Homs	Asria	35°22'03"	37°47'09"	obs.	26	21 May 2000 & 11 March 2004, pellets coll. from Asria ruins
Homs	Qala'at al-Husun, 60 km W Homs	34°47'18"	36°16'10"	obs.	27	1997, 1998, 1999, 2000, 2001, 2004, 2005, 2006, 1 ad., each time while visiting this location new accumulated pellets coll. under the northern tower and inside the castle
Homs	Qala'at al-Husun, 60 km W Homs	34°47'18"	36°16'10"	lit.	27	23 July 1977, pellets coll. by K. Kowalski <i>et al.</i> (Pradel 1981, Nadachowski <i>et al.</i> 1990, Shehab <i>et al.</i> 2004); 1 May 2001, pellets coll. (Obuch 2001); 8 July 2004, pellets
Homs	Tadmur	34°33'22"	39°16'27"	lit.	50	11 March 1979, pellets coll. by R. Kinzelbach (Kock & Nader 1983)
Idlib	Ebla ruins (Tall Mardikh-Ebla), 26 km SE Idlib	35°47'54"	36°47'52"	obs.	28	3 August 1998, 30 September 1998, 17 February 1998, 2 July 2000 and 5 August 2004, 1 ad. roosting in the ruins, new pellets coll., also skeletons of dead owls were collected in 1998
Idlib	Ebla ruins (Tall Mardikh-Ebla), 26 km SE Idlib	35°47'54"	36°47'52"	lit.	28	3 August 1998, 30 September 1998 and 17 December 1998, pellets coll. (Shehab <i>et al.</i> 1999)
Idlib	Kafer Darian, ruins	36°09'49"	36°39'49"	obs.	29	April 1997 and 3 July 2000, several ads. & pellets coll. from abandoned historical water wells in the ruins, where many Roman wells are available
Idlib	Tall Sandal (Agr. Res. Station), 15 km N Idlib	36°03'54"	36°44'48"	obs.	30	04 August 2006, pellets coll.
el-Ladhikiye	Qala'at Salaheddin, 30 km E el-Ladhikiye	35°35'40"	36°03'19"	obs.	31	9 August 2001 & 8 September 2004, pellets coll. inside the castle and at the base of the eastern side of the castle
el-Ladhikiye	Qala'at Salaheddin, 30 km E el-Ladhikiye	35°35'40"	36°03'19"	lit.	31	30 June 1998, pellets coll. (Obuch 2001)
el-Ladhikiye	Jub el-Ghar	35°38'20"	36°15'11"	obs.	32	19 July 2004, 1 ad. roosting temporarily inside a small cave
el-Ladhikiye	Jub el-Ghar	35°38'20"	36°15'11"	lit.	32	17 July 2004, pellets coll. from a cave 1 km E of Jub Al-Ghar Village (Shehab <i>et al.</i> 2006)
Quneitra	Quneitra, Nab'a al Fawar, Youth Camp, 47 km SW Damascus city	33°13'40"	35°56'51"	obs.	33	10 August 2007, 1 ad. flying over the camp
ar-Raqqa	Ar-Raqqa, 10 km S Euphrates	35°50'43"	38°54'50"	obs.	34	13 October 2004, pellets coll.
ar-Raqqa	Beer Al Hashem, 30 km NW ar-Raqqa	36°10'33"	39°01'39"	obs.	35	7 September 2005 and 3 December 2007, 3 ad. roosting in air openings of cereals metallic cells, also pellets coll. under the roosts
ar-Raqqa	El-Ukershe, 12 km SE ar-Raqqa	35°50'49"	39°09'53"	obs.	36	11 March 2004, pellets coll.
ar-Raqqa	El-Ukershe, 12 km SE ar-Raqqa	35°50'49"	39°09'53"	lit.	36	20 March 1996, pellets coll. by C. Ebenau, (Kock 1998, Shehab <i>et al.</i> 2004)
ar-Raqqa	Qater Magara, 7 km S ar-Raqqa	35°52'54"	39°01'41"	obs.	37	13 February 2007, pellets coll. at the cave's entrance

Governate	Locality	Latitude	Longitude	Data type	No. on map	Comments
<b>Barn Owl</b> continued						
ar-Raqqa	Qater Magara, 7 km S ar-Raqqa	35°52'54"	39°01'41"	lit.	37	22 February 1993, pellets coll. by C. Ebenau, (Kock 1998); 19 March 1996 (Shehab <i>et al.</i> 2004)
ar-Raqqa	Ar` Rasafeh	35°37'41"	38°45'22"	lit.	51	(310 m a.s.l.), 28 March 1996, pellets coll. (Kock 1998, Shehab <i>et al.</i> 2004); 21 May 2000, 22 July 2004 and 13 August 2006, pellets coll. from er-Russafa old water reservoirs, (Shehab <i>et al.</i> 2007)
Tartus	Qala'at al-Marqab, (near Bāniyās), 45 km N Tartus	35°09'03"	35°56'58"	obs.	38	09 August 2001 & 23 January 2006, pellets coll. from the castle's cellar.
<b>Eagle Owl</b>						
Dar'aa	Al Yarmouk Valley, 3 km SW Jel'een	32°44'17"	35°57'01"	obs.	1	May 2000, 1 vagrant juvenile, captured on the northern cliffs
Deyr ez-Zur	As' Salihiyyah (Dura Europus), 95 km SE Deyr ez-Zur	34°44'58"	40°43'42"	obs.	2	2000, pellets coll.
Dimashk (Sham)	Katana, 20 km SW Damascus	33°25'49"	36°04'56"	obs.	3	20 June 2004, 1 ad., one mummified specimen presented by a farmer to an officer and later this specimen was sent to A. Shehab
Dimashk (Sham)	Qala'at Nejm, 100 km NE Halap	36°33'17"	38°15'44"	obs.	4	04 July 2000, pellets coll. from the northern side of the castle
Halap	Dana, 40 km W Halap	36°12'30"	36°42'30"	lit.	7	Spring 1995, 1 juvenile (owlet) collected by Osama Denny from Dana village, near Bab Al Hawa, 40 km W Aleppo (Halap) on the Syria-Turkish border, (Manner & Diekmann 1996), this owlet was initially (and incorrectly) identified as a juvenile Long-eared Owl <i>Asio otus</i> but later the authors re-identified it as Eurasian Eagle Owl <i>Bubo bubo</i> (G. Manners, pers. comm.)
Hama	Musyāf, 40 km W Hama	35°03'48"	36°20'22"	obs.	5	2001, one mummified specimen was presented in a grocery shop (the exact place of collection is not known, but this owl was shot in the village)
Homs	15 km SE Karyatein (Al Qaryateine)	34°05'53"	37°17'02"	lit.	8	August 2001, 1 ad. roosting in small to medium-sized caves in a mountainous cliffs at Dar Al Boom (15 km SE of Al Karyatein), also many pellets coll. (Shehab 2004)
Homs	Tadmur (Palmyra) 5 km W ruins	34°34'01"	38°13'01"	lit.	9	23 June 1998 and 24 April 2001, pellets coll. from rocks 5 km W of Tadmur ruins, (Benda <i>et al.</i> 2006)
Idlib	Ebla ruins (Tall Mardikh-Ebla), 26 km SE Idlib	35°47'54"	36°47'52"	obs.	6	2000, 1 ad. shot by the ruins' ranger
Idlib	Hamama (near el-Menfa Cave), 35 km W Idlib	35°55'32"	36°23'13"	lit.	10	18 July 2004, 1 ad. roosting at high cliffs in Orontes river valley, and later on, remains of the Egyptian fruit bat were recovered from the pellets (Shehab & Mamkhair 2004)
<b>Tawny Owl</b>						
el-Ladhikiye	Jub el-Ghar	35°38'20"	36°15'11"	obs.	1	18 July 2004, 1 ad. roosting in mixed forests of the eastern side of the coastal mountains
el-Ladhikiye	Ar Rawda, near Rabi'ah	35°49'16"	36°02'20"	lit.	2	2 July 1998 and 4 May 2001, pellets coll. from pine forest, 600 m a.s.l., (Benda <i>et al.</i> 2006)
el-Ladhikiye	Rabi'ah, near Ar Rawda	35°49'10"	36°00'02"	lit.	3	7 July 1998, pellets coll. (Obuch 2001)
el-Ladhikiye	Qala'at Salah ad Din, 30 km E el-Ladhikiye	35°35'40"	36°03'19"	lit.	4	2 May 2001, pellets coll. from small cave in a gorge under castle ruins, 370 m a.s.l. (Benda <i>et al.</i> 2006)

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<b>Striated Scops Owl</b>						
Dimashk (Sham)	Sarghaya (Agric. Res. Station), 50 km NW Dimashk	33°47'20"	36°08'36"	obs.	1	2 January 2001, 24 July 2001, 15 June 2004 and May 2007, ads. on pine trees, and new pellets of this species were collected under pine trees
el-Haseke	As' Salha, 4 km SW Al Malekiah	37°09'44"	42°04'19"	obs.	2	June 2002 and in July 2005, several ads. roosting in a small bushy area around a natural spring
Halap	Sabkhat al-Jabbul/Halab	36°03'46"	37°28'43"	lit.	3	no specific date (Evans 1994)
<b>Long-eared Owl</b>						
Dimashk (Sham)	Damascus	33°32'24"	36°19'07"	obs.	1	August 1999, 1 injured ad. found at the Faculty of Agriculture
el-Haseke	Hassake city park	36°30'24"	40°44'46"	lit.	3	20 June 1998, pellets coll. from park on the town edge, (Benda <i>et al.</i> 2006)
Homs	At - Tanf, Ar Raa'ed Agri. Project	33°30'28"	38°37'12"	obs.	2	August 2000, 1 ad. (A. Shehab)
Homs	Tadmur (Palmyra) oasis	34°33'01"	39°16'01"	lit.	4	23 June 1998, 23 April 2001 and 15 September 2005, pellets coll. (Obuch 2001; Benda <i>et al.</i> 2006)
<b>Eurasian Scops Owl</b>						
Dimashk (Sham)	Damascus (Faculty of Agriculture)	33°32'24"	36°19'07"	obs.	1	7 July 2005 (A. Shehab) 1 ind. coll. & photos

# ARDEA

TIJDSCHRIFT DER NEDERLANDSE ORNITHOLOGISCHE UNIE (NOU)

ARDEA is the scientific journal of the Netherlands Ornithologists' Union (NOU), published bi-annually in spring and autumn. Next to the regular issues, special issues are produced frequently. The NOU was founded in 1901 as a non-profit ornithological society, composed of persons interested in field ornithology, ecology and biology of birds. All members of the NOU receive ARDEA and L'IMOS and are invited to attend scientific meetings held two or three times per year.

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Printed by Van Denderen, Groningen, The Netherlands, December 2009