

# A survey of the birds of the Dabie Shan range, central China

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The Dabie Shan (Dabie Mountains) range, straddling Henan, Hubei and Anhui provinces in central China, harbours a rich bird diversity, representing a transition between Palaearctic and Oriental realms. Although historical information is available on the avifauna of this region, no recent comprehensive bird survey has been carried out. In this paper we present a bird inventory study for the Dabie Shan range based on ornithological surveys conducted between 2004 and 2006. We recorded 238 bird species during these surveys. Species of conservation significance include Falcated Duck *Anas falcata*, Reeves's Pheasant *Syrnaticus reevesii*, Baer's Pochard *Aythya baeri*, Fairy Pitta *Pitta nympha*, and Brown-chested Jungle Flycatcher *Rhinomyias brunneata*. Ten species are new records for the Dabie Shan range. This region is notable as a transition zone, in that most winter visitors and migrants are Palaearctic and a large proportion of summer breeders are Oriental species. It is also the northernmost part of the range of a number of subtropical breeders in China. The avifauna is threatened by extensive habitat loss outside the protected areas of the range, and we discuss conservation recommendations for the whole region.

## INTRODUCTION

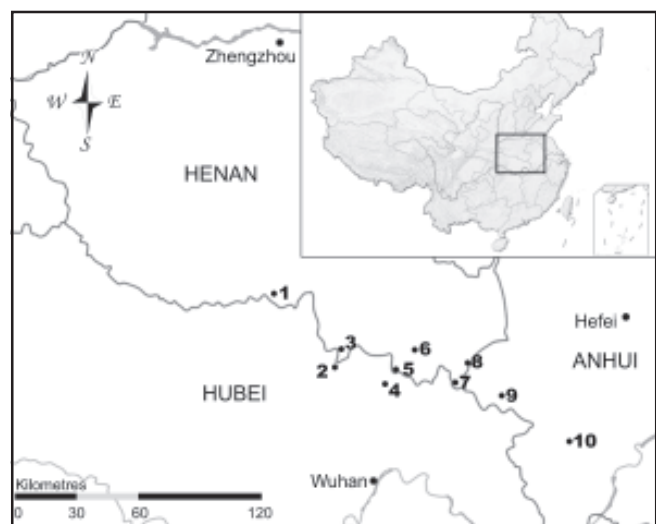
The Dabie Shan (Dabie Mountains) range (30°02'–32°20'N 114°30'–117°05'E) lies in a transition zone between the Palaearctic and Oriental regions in China, and so is crucial to our understanding of biogeography of the Chinese temperate and subtropical zones. The history of ornithological study in the Dabie Shan range can be traced back to the 1880s, when birds were collected by western naturalists, including the type specimen of the subspecies *joretiana* of Koklass Pheasant *Pucrasia macrolopha* (Han 1991) and the northernmost record of White-eared Night Heron *Gorsachius magnificus* (He *et al.* 2007). The first systematic checklist of birds of Henan Province by Fu (1937) listed 213 species of birds found in the region. After 1949, a number of wildlife surveys were carried out in succession, including that of Zhou (1960), who listed 81 species and subspecies of birds in the northern slopes of the range. Ornithological research has been carried out in Dongzhai National Nature Reserve (NNR) for more than 40 years, and in the 1960s, under the supervision of Cheng Tso-hsin, artificial nests were used to attract birds. Zhang (1979, 1981) surveyed Dongzhai and reported 213 species of birds, including nine species new to the Dabie Shan; this was considered to be the first complete list of birds of the region. Later surveys focusing on the birds in other parts of the Dabie Shan include those of Li (1986) in Tongbai county and Wang (1983) in Anhui. A series of nature reserves around the Dabie Shan range have been established since the 1980s and checklists of birds of the reserves (based mainly on field records) have been published, such as those for Jigong Shan NNR (Song 1994), Dongzhai NNR (Song and Qu 1996) and Liankang Shan NNR (Ye *et al.* 2002).

In this paper we present results from the first comprehensive bird inventory study for the Dabie Shan range, based on systematic surveys of ten sites conducted between 2004 and 2006. Our survey contributes in three ways. First, although information from previous bird inventories is available, past surveys were relatively limited in geographical scale, normally concentrated within a single nature reserve, and no recent attempt has been made to survey birds across the whole Dabie Shan range. Second, we identified a need for the collection of

information on species of conservation concern to inform reserve managers at the regional level, and to improve our knowledge about the distribution of these species. The third purpose of our investigation was to document the avifauna of a few places which had received little or no prior ornithological attention.

## STUDY AREA AND METHODS

The Dabie Shan range lies across Henan, Hubei and Anhui provinces in central China (Fig. 1), and is part of the watershed between the Huaihe and Yangtze River systems, with several large rivers originating here. The highest peak (1,774 m) of the mountain range is located in Huoshan County, Anhui Province. The climate is north sub-tropical monsoon: humid and hot in the summer and dry and cold during the winter. The average annual temperature is 14.5°C, and annual rainfall c.1,400 mm (Liu and Wu 1994). Due to its geography and climate, the Dabie Shan range harbours a rich diversity of flora and fauna. The main vegetation types in this area are plantations of bamboo, pine and chestnut trees. Secondary



**Figure 1.** Map showing the locations of survey sites around the Dabie Shan range, China. Numbers correspond to the sites listed in Table 1.

**Table 1.** Survey sites in the Dabie Shan range, 2004–2006.

No. Site	Province	Size (km <sup>2</sup> )	Geographical coordinates	Altitude surveyed (m)	Protected Status <sup>1</sup>	Dates visited
1 Taibaiding	Henan	10.67	32°22'N 113°16'E	300–1,100	FF, unprotected	6–7 Apr 2005
2 Zhonghua Shan	Hubei	60	31°39'N 113°57'E	300–600	FP, unprotected	14–15 Apr 2005
3 Jigong Shan	Henan	30	31°46'–31°52'N 114°01'–114°06'E	300–800	NNR, protected	8–9 Apr 2005
4 Xianjuding	Hubei	22	31°32'N 114°26'E	200–600	FF, unprotected	1–2 Jan and 16–18 Apr 2005
5 Dongzhai	Henan	c.100	31°28'–32°09'N 114°18'–114°30'E	100–600	NNR, protected	Feb–Aug, Dec 2004; Jan–Aug, Nov–Dec 2005; Jan–June 2006
6 Shishankou Reservoir	Henan	306	32°00'N 114°20'E	60–100	Reservoir, unprotected	4 Dec 2004; 5 Jan, 28 May and 3 Dec 2005
7 Liankang Shan	Henan	c.100	31°23'–31°35'N 115°13'–115°20'E	200–1,000	NNR, protected	3–5 Apr 2005
8 Huangbai Shan	Henan	37.05	31°23'–31°35'N 115°13'–115°20'E	250–900	FF, unprotected	12–13 Apr 2005
9 Tianma Shan	Anhui	172.03	31°10'–31°20'N 115°20'–115°50'E	300–800	NNR, protected	10–11 and 23–24 Apr 2005
10 Yaoluoping	Anhui	c.123	30°40'–31°06'N 116°03'–116°33'E	300–1,300	NNR, protected	14–15 Apr, 4–5 May 2005

north-tropical evergreen broadleaf, and mixed deciduous and coniferous forests remain in the core areas of nature reserves and at high elevations.

During 2004–2006, ornithologists from Beijing Normal University and their assistants from Dongzhai NNR conducted bird surveys covering five nature reserves, four unprotected forest farms and one artificial reservoir in Henan, Hubei and Anhui Provinces (see Fig. 1 and Table 1). Dongzhai NNR was the base for these studies, and was surveyed every month from February 2004 to December 2006. The other eight forest sites were visited mainly during spring 2005 at the time when most residents

and summer breeders began to show courtship displays and other breeding activity, allowing relatively easy detection and identification of breeding individuals by the surveyors. All surveys were carried out along line transects or forest trails. Birds were identified through calls and visually using binoculars. For each sighting, species, number of individuals and microhabitat was noted. Coordinates (latitude and longitude) and altitude were recorded with a Garmin hand-held Global Positioning System (GPS). Data on altitude allowed us to calculate a rough elevation span for each species. Field observations were supplemented by mist-netting at

**Table 2.** Species listed as occurring in the Dabie Shan range, but not detected in 2004–2006.

Species	Seasonal status <sup>1</sup>	Site	Source <sup>2</sup>
WHISTLING SWAN <i>Cygnus columbianus</i> II <sup>3</sup>	P,W	Shishankou	1
SWAN GOOSE <i>Anser cygnoides</i> EN, II	P,W	Shishankou	1
GREATER WHITE-FRONTED GOOSE <i>Anser albifrons</i>	P,W	Shishankou	1
LESSER WHITE-FRONTED GOOSE <i>Anser erythropus</i> VU, II	P,W	Shishankou	1
BAIKAL TEAL <i>Anas formosa</i> VU, II	P,W	Shishankou	1
EASTERN GRASS OWL <i>Tyto longimembris</i> II	R	Jigongshan	2
SHORT-EARED OWL <i>Asio flammeus</i> II	P	Dongzhai	2
BARRED CUCKOO DOVE <i>Macropygia unchall</i>	V	Dongzhai	3
GREAT BUSTARD <i>Otis tarda</i> VU, I	P	Shishankou	4
IMPERIAL EAGLE <i>Aquila heliaca</i> VU, I	P	Shishankou	2
PIED FALCONET <i>Microhierax melanoleucos</i> II	V	Jigongshan	5
RED-NECKED GREBE <i>Podiceps grisegena</i>	P	Shishankou	1
SWINHOE'S EGRET <i>Egretta eulophotes</i> VU, II	S	Dongzhai	3
WHITE-EARED NIGHT HERON <i>Gorsachius magnificus</i>	R	Huoshan	6
BLACK BITTERN <i>Dupetor flavicollis</i>	S	Dongzhai	3
WHITE SPOONBILL <i>Platalea leucorodia</i> II	P,W	Shishankou	1
ORIENTAL WHITE STORK <i>Ciconia boyciana</i> EN, I	P	Shishankou	1
WHITE-BROWED SHORTWING <i>Brachypteryx montana</i>	R	Liankangshan	7
JAPANESE BUSH WARBLER <i>Cettia diphone</i>	P	Dongzhai and Jigongshan	3, 5
BROWN BUSH WARBLER <i>Bradypterus luteoventris</i>	S	Dongzhai	4
BLUNT-WINGED WARBLER <i>Acrocephalus concinens</i>	S	Dongzhai	4
BUFF-THROATED WARBLER <i>Phylloscopus subaffinis</i>	P	Dongzhai	3
PYGMY WREN BABBLER <i>Pnoepyga pusilla</i>	R	Liankangshan and Dongzhai	3, 7

<sup>1</sup> Status assigned according to the original sources. R: Resident, P: Passage, S: Summer breeder, W: Winter visitor, V: Vagrant

<sup>2</sup> Sources. 1: Zhang *et al.* (2002), 2: Niu *et al.* (2002), 3: Song and Qu (1996), 4: Zhang (1981), 5: Song (1994), 6: He *et al.* (2007), 7: Ye *et al.* (2002).

<sup>3</sup> International threat category and conservation status in China. IUCN Red List categories EN: Endangered, VU: Vulnerable; and Classes I and II in the List of Wildlife under Chinese National Priority Protection.

Dongzhai NNR on 17–24 December 2004 and on 15–23 December 2006. At Shishankou Reservoir, the only large wetland site within our study area, surveys were conducted in mid-winter when the wintering congregation was at its peak. Waterbirds were surveyed by total counts at several counting stops along the bank. Sometimes we hired boats to enter the core area of the reservoir to obtain better views. The periods we spent at each site are shown in Table 1.

All species recorded in the survey are listed in the Appendix. For each species, we present its status in the region, international and national threat category where applicable, locations of records and altitudinal range observed. Seasonal status is taken from the atlas in Cheng (1987) and from MacKinnon and Phillipps (2000), except for vagrants or those species whose range has been expanded as explained in this paper. Threat categories are taken from the IUCN Red List (BirdLife International 2008) and the List of Wildlife under Chinese National Priority Protection (Zheng and Wang 1998). Some species were not detected during our survey but are listed in the checklists of the nature reserves of the region; these species are listed in Table 2.

Nomenclature mainly follows Inskipp *et al.* (2001). Scientific names are given only for those species not listed in Table 2 or the Appendix.

### Study sites

Tongbai Shan is located at the western end of the Dabie Shan range. Most of the area studied is situated within Tongbai County, Henan Province. On average 42% of land is allocated to forestry, but most of this is plantation, except for some secondary forest patches surviving at inaccessible areas at high elevation. Tongbai Shan, whose summit is Taibaiding (c.1,140 m), is one of the sources of the Huaihe River.

Zhonghua Shan Forestry Farm (FF) is situated at the centre of the Dabie Shan range, in Guangshui City, Hubei province. Most of the forest is conifer plantation.

Jigong Shan NNR, lies to the southwest of Xinyang City, Henan Province, and borders Hubei Province. For a long time, this reserve has been kept undisturbed as a summer resort by local government and it therefore harbours good secondary forest and a rich diversity of plants.

Founded in 1956 as a forestry farm, Xianjuding lies 41 km northwest of Chengguan Town, Hubei Province. Most of the forest here is coniferous plantation, dominated by *Pinus massoniana* and *Platycladus orientalis*. Selective logging is still in evidence in the foothills, although it is said to contain areas of fully preserved secondary forest.

Dongzhai NNR is situated in Luoshan County, Henan Province, on the northern slopes of the Dabie Shan. It is designated as a nature reserve for the protection of forest birds and their habitat. It has recently been identified as an Important Bird Area (IBA) in the Southeast Chinese Forests (F03) (BirdLife International 2004).

Shishankou Reservoir lies 18 km northeast of Dongzhai NNR, Henan province. Some tributaries of the Huaihe River drain into the reservoir. The reservoir serves as both a flood control area and water supply for Xinyang city.

Liankang Shan NNR is situated in the middle of the Dabie Shan range at the border of Henan and Hubei provinces. It is very wet in the summer, receives an annual

rainfall of 1,248 mm, and forms the watershed of the Huaihe River and Yangtze River systems. The reserve was accorded protection by the local government in 1982 and was upgraded to a National Reserve in 2004.

Huangbai Shan FF is located in the southeastern corner of Henan province, bordering Anhui and Hubei. There are steep, rugged mountains in the southeast, the peak of which is Jiufengjian (1,350 m). Here the artificial and secondary forests are dominated by pine, fir and chestnut trees, and bamboo.

Tianma Shan NNR is the largest nature reserve in the Dabie Shan range, situated in southwestern Jinzhai County, at the border of Anhui and Hubei Province. Secondary forest amounts to 59% of the area of the reserve, the rest being plantation. The summit, Tiantangzhai (1,729 m), is the second highest peak of the Dabie Shan range.

Yaoluoping NNR is situated in Yuexi County, Anhui Province. It constitutes the main part of the Dabie Shan range. Most peaks in the reserve are over 1,000 m. The types of forest include north tropical evergreen broadleaf, mixed deciduous and coniferous forest. Owing to the 1,600 mm annual precipitation, it is a key watershed for the Huaihe River.

## RESULTS

A total of 238 species were recorded during our survey (see Appendix). Below, we give details of significant records, defined as those that meet at least one of the following criteria:

1. Globally threatened species listed by BirdLife International (2008).
2. Records leading to substantial range extensions or records of regular occurrence in the survey area for species not listed in Cheng (1987) or MacKinnon and Phillipps (2000).
3. Vagrants far from their normal ranges (as described by Cheng 1987 or MacKinnon and Phillipps 2000) but recorded in our survey area once.

In addition, we discuss two highly endangered species—White-eared Night Heron and Crested Ibis—which were not recorded during the survey are known from the region in the past.

### FALCATED DUCK *Anas falcata*

Near Threatened. Four were recorded at Shishankou Reservoir on 1 December 2004, and 10 on 5 January 2005. Our observations suggest the Falcated Duck is a rare winter visitor in the region.

### BAER'S POCHARD *Aythya baeri*

Endangered. Two were recorded at Shishankou Reservoir on 3 December 2005. The global population of this species has been declining in recent decades (BirdLife International 2008). It is probably a scarce and occasional winter visitor to the region.

### REEVES'S PHEASANT *Syrnaticus reevesii*

Vulnerable. This species is listed as class II in the Chinese National Protection Wildlife List (Zheng and Wang 1998). Although the population has been shrinking in both size and distribution range, and has become uncommon or



absent elsewhere in central and western China, the Dabie Shan range still holds considerable numbers of this Chinese endemic. Reeves's Pheasant was regularly recorded at all nine surveyed forest areas across the Dabie Shan range. Non-breeding flocks consisting of females and juveniles were frequently sighted in the winter. At Baiyun Monitoring Station in Dongzhai NNR, we counted 13 individuals on 15 December 2004. Males are normally not difficult to detect in spring, when their wing-whirring display is very audible. The birds were observed between 100 m (Dongzhai) and 800 m (Yaoluoping), and thus at lower altitudes than previously thought (400–2,600 m; BirdLife International 2001). Since Reeves's Pheasant appears to depend heavily on natural forest (Sun *et al.* 2003), the replacement of natural vegetation with commercial monoculture plantations in unprotected forest farms is likely to be a major threat. Besides habitat loss and alteration, poaching also gives cause for concern. Hunted males were observed for sale alongside Common Pheasant at a restaurant in Guangshui County, Hubei, in spring 2006. Illegal traps were also found at Zhonghua Shan Forest Farm and Xianjuding Forest Farm, indicating that poaching does occur in some unprotected areas.

#### KOKLASS PHEASANT *Pucrasia macrolopha*

The subspecies *joretiana* of Koklass Pheasant, also known as Joret's Koklass Pheasant, was first collected and described by Heude in Huoshan County within the Dabie Shan range in 1883 (Han 1991). On 1 April 2005, feathers of this species were found near Jilong monitoring station (770 m), Dongzhai NNR. One and three females were recorded at two transect lines (altitude of 900 m) at Liankang Shan NNR on 3 and 5 April 2005 respectively. A group of five was observed on 15 April 2005 at Yaoluoping NNR (1,090 m). There were no records of Koklass Pheasant at Jigong Shan, Xianjuding or Zhonghua Shan, probably because of the lower elevation of those sites. This species appears to be restricted to the higher elevation of the eastern part of the Dabie Shan range, with only slight overlap with the distribution of Reeves's Pheasant.

#### CRESTED SERPENT EAGLE *Spilornis cheela*

One adult flew north near Jinniuji (600 m), Zhonghua Shan Forest Farm on 15 April 2005. This record is the first for Hubei province. In February 2003 and January 2005, two and one birds were observed regularly in Foping NNR, Qingling Mountains (YL pers. obs.), which is at the same latitude as the Dabie Shan range. These northernmost records may indicate a northward range extension of this forest raptor.

#### BONELLI'S EAGLE *Hieraetus fasciatus*

Two individuals were observed soaring at 400 m over Xianjuding Forest Farm on 17 April 2005, the first record for Hubei Province and a northwards range extension. According to MacKinnon and Phillipps (2000), there are records of vagrant birds in Hebei province. Another northern record is from near Beijing (Cai 1987).

#### GREY-FACED BUZZARD *Butastur indicus*

Twenty-one individuals were observed flying north near Jinniu Jian (Jian = peak; 600 m), Zhonghua Shan Forest Farm on 14–15 April 2005 and three were also noted at Dongzhai NNR on 4 May 2005. Another two birds were

regularly observed at Baiyun Monitoring Station (31°56'48"N 114°15'44"E, 150 m) from 8 May 2005 onwards, and a newly fledged juvenile (presumably their offspring) was recorded there on 30 June 2005, the first breeding record for the Dabie Shan range. This provides confirmation of a southern extension in breeding range, although previous summering and display pairs have been observed from Yao Shan, Guangxi province (Lewthwaite 1996).

#### WHITE-EARED NIGHT HERON *Gorsachius magnificus*

Endangered. Recent surveys indicate that this enigmatic nocturnal species is widespread than previously thought (He *et al.* 2007), but the northernmost sub-population of the Dabie Shan range remains poorly known (He *et al.* 2007). So far, only one record exists: of skins collected by Père Courtois on 11 May 1910 at 'Manchoei-ho' (Manshuihe, 31°11'20.6"N 116°00'30.5"E) near 'Ho-Shan' (Huoshan), Anhui (He *et al.* 2007). Manshuihe is only c.50 km north-west of the Tianmashan NNR. No sign of this species was found by either our survey or a separate survey focusing on this species (He *et al.* 2007). Further surveys are required to ascertain whether this species is truly absent from the Dabie Shan range, or whether small population size and nocturnal habits have led to the species going unrecorded for almost a century.

#### CRESTED IBIS *Nipponia nippon*

Endangered. The only known remaining population of this species is in Yangxian County, Shaanxi Province. The species is known historically from the Dabie Shan region, which lies at the same latitude and has similar climate and habitats as Yangxian County. Dongzhai NNR was selected as a site for reintroduction of Crested Ibis by the State Forestry Administration of China in 2005. Two captive pairs were imported to Dongzhai and raised there in 2006, and captive breeding and reintroduction is planned in the future.

#### FAIRY PITTA *Pitta nympha*

Vulnerable. Fairy Pitta is a rare migrant or summer breeder in Southeast China (Cheng 1987, Zheng and Wang 1998). It was reported that this species was uncommon in the Dabie Shan range and neighbouring mountains in central and southern Anhui Province (Fu 1937, Liu *et al.* 1996). We noted single singing males at Baiyun Monitoring Station (150 m), Dongzhai NNR, on 15 May 2004 and 12 May 2005, which were the earliest records of each year. Up to eight territorial males were recorded here on 26 May 2005. Four of these were seen regularly, and continued singing until late June. Two birds were also heard near Lingshan Monitoring Station (31°53'29"N 114°05'12"E, 200 m) on 29 May 2005. This species has been reported as a rare summer breeder at Jigong Shan (Song 1994) and Liankang Shan NNR (Ye *et al.* 2002). Fairy Pitta seems highly dependent on the lowland forest in summer, but habitat use, ecology and life history in this central Chinese population is generally poorly understood.

#### BROWN-CHESTED JUNGLE FLYCATCHER

##### *Rhinomyias brunneata*

Vulnerable. A singing male was discovered and lured out into view by playback by Jesper Hornskov near Baiyun Monitoring Station (150 m), Dongzhai NNR on 26 May 2005. Single singing males were found by YL at Lingshan

(200 m) and at Baiyun on 29 May and 5 June 2005 respectively. Thereafter, the last record was of one singing male at another patch of woods at Baiyun on 25 June 2005—possibly the same individual as one of those sighted in May. The Brown-chested Jungle Flycatcher is an endemic summer breeder in the subtropical forests of southeastern China in Anhui, Jiangsu, Shanghai, Zhejiang, Fujian, Hunan, Guangdong, Guangxi and Guizhou provinces (Cheng 1987, Lewthwaite 1996). MacKinnon and Phillipps (2000) describe sporadic records in evergreen broadleaf, bamboo, secondary or artificial forest between 600 m and 1,200 m in altitude. Henan is not included in its normal breeding range by Fu (1937), Cheng (1987) or MacKinnon and Phillipps (2000), although Meyer de Schauensee (1984) lists this species for Southern Henan without giving details. We suppose that the reason why no specimens were collected in past surveys is because of the cryptic habit of this species, which makes it easily overlooked. Dongzhai is around 400 km from the previously known northernmost breeding sites of this species, e.g. Huang Shan, Anhui (Wang 1983) and West Tianmu Shan (China Ornithological Society 2005). Despite the fact that we could not confirm the occurrence of breeding, we suppose that this species is a rare summer visitor to the Dabie Shan range; our records suggest a northern extension to its breeding range.

**'ELISE'S FLYCATCHER'** *Ficedula (narcissina) elisae*

The distinctive race *elisae* of the Narcissus Flycatcher, is sometimes given full species status, known as 'Elise's Flycatcher' *Ficedula elisae* (Robson 2005). This north-east China mountain breeder presumably winters in the Thai-Malay Peninsula (Robson 2005). An adult male was sighted at Baiyun Monitoring Station (150 m), Dongzhai NNR, on 12 May 2005, but was not seen subsequently. This is the first record of this taxon for Henan Province. Very little is known about migration of this taxon and records of migrants in central China are very rare.

**GREY-HEADED CANARY FLYCATCHER**

*Culicicapa ceylonensis*

One was seen at Baiyun Monitoring Station (150 m), Dongzhai NNR, on 11 August 2004—a new record for the Dabie Shan range and also a first record for Henan Province. This species is a summer breeder or resident from low- to mid-altitude forests in central and southwestern China. Previous vagrant birds were only sighted around Beidaihe (MacKinnon and Phillipps 2000)

**STRIATED PRININA** *Prinia criniger*

Three or four singing males were recorded in bushes near the northeast edge of Shishankou Reservoir (60 m) on 28 May 2005—the first record for Henan Province, and a north-easterly range extension. Afterwards, they were frequently observed around the reservoir. It is possible that this species is regionally common in the lowlands of the Dabie Shan range.

**COMMON CHIFFCHAFF** *Phylloscopus collybita*

One was netted and ringed (Plate 1) in broadleaf forest at Qilichong Monitoring Station (250 m), Dongzhai NNR, on 23 December 2006, apparently the first record for Henan Province. Vagrant birds in winter in eastern China have previously been reported only from Hong Kong (Carey *et al.* 2001).

**CHINESE LEAF WARBLER** *Phylloscopus yunnanensis*

Two were seen in broadleaf forest at Xianjuding Forest Farm (450 m) on 17 April 2005, probably vagrants from the breeding population in northern China. Although this species possesses a large breeding range, including the montane areas of Beijing, Hebei, Shanxi and Sichuan (MacKinnon and Phillipps 2000), migration records in central China are extremely scarce.

**JAPANESE GROSBEAK** *Eophona personata*

A flock of c.40 was recorded in a relatively open woodland habitat, at Baiyun Monitoring Station (150 m), Dongzhai NNR, on 21 March 2006. This observation extends the range of this species westwards, as this species was previously known to winter only in eastern and south-eastern China (MacKinnon and Phillipps 2000).

**SLATY BUNTING** *Latoucheornis siemsseni*

On 15 April 2005, a single male was observed at Yaoluoping NNR (1,100 m). It is possible that there is a breeding population in the Dabie Shan range, but no further evidence of breeding could be gathered. This is the first record for Anhui Province, and probably indicates a range extension to the east. The species was previously known to breed only in the mountains of Sichuan and Shaanxi (MacKinnon and Phillipps 2000).

## DISCUSSION

**Composition of the avifauna**

Combining our field surveys and records from the literature, a total of 261 species (238 species recorded during the survey plus 23 recorded earlier) have been recorded from the Dabie Shan range, c.18% of the Chinese avifauna. Among these are several globally threatened species: Falcated Duck, Baer's Pochard, Reeves's Pheasant, Fairy Pitta and Brown-chested Jungle Flycatcher. Golden Eagle is ranked Class I in the List of Wildlife under Chinese National Priority Protection and 28 other species are of Class II, including Koklass Pheasant, Mandarin Duck, Eurasian Eagle Owl and



**Plate 1.** Common Chiffchaff *Phylloscopus collybita* at Qilichong Monitoring Station (250 m), Dongzhai Nature Reserve on 23 December 2006. (Bo Xi.)

Bonelli's Eagle (Zheng and Wang 1998). Our survey has added ten taxa to the bird list of the Dabie Shan range. They are: Crested Serpent Eagle, Bonelli's Eagle, Brown-chested Jungle Flycatcher, Elise's Flycatcher, Grey-headed Canary Flycatcher, Striated Prinia, Common Chiffchaff, Chinese Leaf Warbler, Japanese Grosbeak and Slaty Bunting.

The faunal composition suggests that the Dabie Shan region represents a transition between the Palaearctic and Oriental avifauna in China (Zhang 1999). Most winter visitors and passage migrants are Palaearctic species, whereas a large proportion of residents and summer breeders are belong to the fauna of Oriental realm. The Dabie Shan range appears to form the northeast boundary of the summer range of several species: Speckled Piculet, Blue-throated Bee-eater, Greater Coucal, Asian Barred Owllet, Black Baza, Swinhoe's Minivet, Orange-headed Thrush, Japanese Thrush, Black Bulbul, Rufous-faced Warbler and Slaty Bunting. Although there have been previous sporadic records north of the Dabie Shan range for some of these species, there is no evidence of regular breeding in the north.

Twenty-three species listed in the published literature on the Dabie Shan range or in checklists of nature reserves were not recorded during our survey (Table 2). Their absence during our survey does not prove their disappearance. Several of the missing species are highly wetland-dependent, and we surveyed only a single wetland to any significant degree. Other species are rare and likely easily overlooked. The occurrence of a few species on these checklists (e.g., Swinhoe's Egret and Barred Cuckoo Dove) is doubtful. These would be far from their normal ranges, and may have been wrongly identified.

### Conservation

The Dabie Shan region faces a number of serious conservation challenges. The region is home to a large human population. Over the years the natural secondary forests of the region have suffered owing to high demand for timber and to reclamation for agriculture. Since the 1980s, a total of five National Nature Reserves have been established in the region, covering a total area of nearly 500 km<sup>2</sup>. The major purpose of these reserves is to protect the forests and vegetation of the Chinese temperate and north subtropical transition zone, and conserve endangered birds like Reeves's Pheasant and Fairy Pitta. A dozen provincial reserves function as supplementary protected areas. Shihankou Reservoir, Jigong Shan NNR and Dongzhai NNR have recently been identified as Important Bird Areas (IBA), with codes CN296, CN297 and CN298 respectively (BirdLife International 2004).

Legislation and management have brought about a great reduction in logging in nature reserves and adjacent areas. Under a programme aiming to protect natural forests, launched by the Chinese State Forestry Administration, natural forests, whether inside or outside nature reserves, are controlled by local government. Logging of forests has been stopped, with local government compensating the forest manager or landlord.

Despite these conservation successes, threats through habitat destruction remain common outside protected areas. The poaching of birds—particularly pheasants—for food and recreation frequently occurs. New nature reserves need to be established to protect wildlife and its habitats. In addition, management of the existing

protection areas must be strengthened: conservation action plans should be reviewed, and managers should be given greater powers to curb illegal hunting. The managers of nature reserves should also consider increasing the connectivity between adjoining nature reserves and forest farms to promote habitat continuity. Avifaunal checklists of these nature reserves require regular updating to identify key species and their preferred habitat for protection.

We suggest that the Reeves's Pheasant is an excellent flagship or umbrella species under which such conservation activities in the Dabie Shan range could take place. This bird has been listed as one of the key species in the Chinese Wildlife Protection Action Plan (2001–2010) (Zhang *et al.* 2003), and has been proposed to be upgraded to a higher protected classification (Zheng and Wang 1998). Some of our survey areas like Huangbai Shan, Xianju Ding and Tongbai Shan still hold considerable numbers of this magnificent pheasant, and this could be used to promote wildlife conservation and ornithological research in the region. Baer's Pochard is another key species in the checklist of the Dabie Shan range in terms of its global Endangered threat category. However, we have only a single record, and so the importance of the region for this species and other threatened waterbirds is hard to evaluate. Further survey efforts concentrated on waterbirds and wetlands of the Dabie Shan range are needed to plug the current knowledge gaps about these birds and habitats.

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## APPENDIX

### Birds recorded in the Dabie Shan range, 2004–2006

Species	Seasonal status <sup>1</sup>	Site <sup>2</sup>	Elevation (m)
JAPANESE QUAIL <i>Coturnix japonica</i>	W	5, 6	60–150
KOKLASS PHEASANT <i>Pucrasia macrolopha</i> II <sup>3</sup>	R	5, 7	770–1,090
REEVES'S PHEASANT <i>Syrnaticus reevesii</i> VU, II	R	1–5, 7–10	150–800
COMMON PHEASANT <i>Phasianus colchicus</i>	R	1, 2, 4–7	60–1,100
WHOOPEE SWAN <i>Cygnus cygnus</i> II	W	6	60
BEAN GOOSE <i>Anser fabalis</i>	W	5, 6	60–200
RUDDY SHELDUCK <i>Tadorna ferruginea</i>	W	6	60
MANDARIN DUCK <i>Aix galericulata</i> II	S	5, 8	100–500
FALCATED DUCK <i>Anas falcata</i> NT	P	6	60
EURASIAN WIGEON <i>Anas penelope</i>	W	6	60
MALLARD <i>Anas platyrhynchos</i>	W, P	3, 6	60–300
SPOT-BILLED DUCK <i>Anas poecilorhyncha</i>	W, P	6	60
NORTHERN SHOVELLER <i>Anas clypeata</i>	W	6	60

Species	Seasonal status <sup>1</sup>	Site <sup>2</sup>	Elevation (m)
NORTHERN PINTAIL <i>Anas acuta</i>	W	6	60
COMMON TEAL <i>Anas crecca</i>	W	3, 6	60–300
COMMON POCHARD <i>Aythya ferina</i>	W	6	60
BAER'S POCHARD <i>Aythya baeri</i> EN	W	6	60
TUFTED DUCK <i>Aythya fuligula</i>	W	6	60
COMMON GOLDENEYE <i>Bucephala clangula</i>	W	6	60
SMEW <i>Mergellus albellus</i>	W	6	60
COMMON MERGANSER <i>Mergus merganser</i>	W	6	60
SPECKLED PICULET <i>Picumnus innominatus</i>	R	2, 3, 5	100–400
GREY-CAPPED WOODPECKER <i>Dendrocopos canicapillus</i>	R	1–5, 8	200–800
GREAT SPOTTED WOODPECKER <i>Dendrocopos major</i>	R	1–10	60–1000
GREY-HEADED WOODPECKER <i>Picus canus</i>	R	1, 3, 5	200–500
COMMON HOOPOE <i>Upupa epops</i>	R	1, 3–6	60–600
DOLLARBIRD <i>Eurystomus orientalis</i>	S	5	150–400
COMMON KINGFISHER <i>Alcedo atthis</i>	R	3, 5–9	60–400
BLACK-CAPPED KINGFISHER <i>Halcyon pileata</i>	S	2, 3, 5, 6, 10	60–800
CRESTED KINGFISHER <i>Megaceryle lugubris</i>	R	2, 3, 5, 6	60–400
BLUE-THROATED BEE-EATER <i>Merops viridis</i>	S	5, 6	60–200
CHESTED-WINGED CUCKOO <i>Clamator coromandus</i>	S	2, 3, 5	100–300
LARGE HAWK CUCKOO <i>Hierococcyx sparveriioides</i>	S	2–5, 8, 10	300–1,300
INDIAN CUCKOO <i>Cuculus micropterus</i>	S	1–10	60–800
EURASIAN CUCKOO <i>Cuculus canorus</i>	S	1, 3–8	60–400
ORIENTAL CUCKOO <i>Cuculus saturatus</i>	S	3, 5, 7–10	200–800
LESSER CUCKOO <i>Cuculus poliocephalus</i>	S	5, 7, 8	200–1,000
ASIAN KOEL <i>Eudynamis scolopacea</i>	S	5, 6	60–150
GREATER COUCAL <i>Centropus sinensis</i>	R	6, 8, 10	60–100
WHITE-THROATED NEEDLETAIL <i>Hirundapus caudacutus</i>	P	4	400
COMMON SWIFT <i>Apus apus</i>	P	5, 6	60–200
FORK-TAILED SWIFT <i>Apus pacificus</i>	P	1, 5, 8	100–800
ORIENTAL SCOPS OWL <i>Otus sumia</i>	S	2–5, 7, 8	200–1,000
COLLARED SCOPS OWL <i>Otus bakkamoena</i>	R	4	400
EURASIAN EAGLE OWL <i>Bubo bubo</i>	R	5	250
COLLARED OWLET <i>Glaucidium brodiei</i>	S	2, 3, 5	150–400
ASIAN BARRED OWLET <i>Glaucidium cuculoides</i>	R	1–5, 7, 8	150–250
LITTLE OWL <i>Athene noctua</i>	R	4–6	60–200
BROWN BOOBOOK <i>Ninox scutulata</i>	S	2, 5	150
LONG-EARED OWL <i>Asio otus</i>	W	5	200
GREY NIGHTJAR <i>Caprimulgus indicus</i>	S	2–5, 7–9	150–750
HILL PIGEON <i>Columba rupestris</i>	R	1, 4, 5	400–1,100
ORIENTAL TURTLE DOVE <i>Streptopelia orientalis</i>	R	1–7	60–800
SPOTTED DOVE <i>Streptopelia chinensis</i>	R	1–10	60–400
RED COLLARED DOVE <i>Streptopelia tranquebarica</i>	S	4, 6	60–100
EURASIAN COLLARED DOVE <i>Streptopelia decaocto</i>	R	6	60
BROWN CRAKE <i>Amaurornis akool</i>	S	5	200
WHITE-BREASTED WATERHEN <i>Amaurornis phoenicurus</i>	S	4–6	60–150
WATER RAIL <i>Rallus aquaticus</i>	S	6	60
BALLION'S CRAKE <i>Porzana pusilla</i>	P	6	60
RUDDY-BREASTED CRAKE <i>Porzana fusca</i>	S	6	60
WATERCOCK <i>Gallinix cinerea</i>	S	5, 6	60–100
COMMON MOORHEN <i>Gallinula chloropus</i>	S	6	60–100



Species	Seasonal status <sup>1</sup>	Site <sup>2</sup>	Elevation (m)
COMMON COOT <i>Fulica atra</i>	W	6	60–100
EURASIAN WOODCOCK <i>Scolopax rusticola</i>	P, W	4	550
PINTAIL/SWINHOE'S SNIPE <i>Gallinago stenura/ G. megala</i>	P	6	60–100
COMMON SNIPE <i>Gallinago gallinago</i>	P	6	60–100
SPOTTED REDSHANK <i>Tringa erythropus</i>	P	6	60–100
COMMON REDSHANK <i>Tringa totanus</i>	P	6	60–100
MARSH SANDPIPER <i>Tringa stagnatilis</i>	P	6	60–100
COMMON GREENSHANK <i>Tringa nebularia</i>	P	6	60–100
GREEN SANDPIPER <i>Tringa ochropus</i>	P	5, 6	60–150
WOOD SANDPIPER <i>Tringa glareola</i>	P	6	60–100
COMMON SANDPIPER <i>Actitis hypoleucos</i>	P	6	60–100
DUNLIN <i>Calidris alpina</i>	P, W	6	60–100
PHEASANT-TAILED JACANA <i>Hydrophasianus chirurgus</i>	S	5	200
LONG-BILLED PLOVER <i>Charadrius placidus</i>	R	5	150
LITTLE RINGED PLOVER <i>Charadrius dubius</i>	S	5, 6	60–250
KENTISH PLOVER <i>Charadrius alexandrinus</i>	P	6	60
NORTHERN LAPWING <i>Vanellus vanellus</i>	P	5, 6	60–100
GREY-HEADED LAPWING <i>Vanellus cinereus</i>	S, P	5, 6	60–200
YELLOW-LEGGED GULL <i>Larus cachinnans</i>	W	6	60–100
BLACK-HEADED GULL <i>Larus ridibundus</i>	W	6	60–100
COMMON TERN <i>Sterna hirundo</i>	P	6	60–100
WHISKERED TERN <i>Chlidonias hybrida</i>	S	6	60–100
WHITE-WINGED TERN <i>Chlidonias leucoptera</i>	P	6	60–100
BLACK BAZA <i>Aviceda leuphotes</i> II	S	2–5, 7, 8	100–600
ORIENTAL HONEY-BUZZARD <i>Pernis ptilorhynchus</i> II	P	2–5, 7	200–800
BLACK KITE <i>Milvus migrans</i> II	R	2, 4, 5	200–800
* CRESTED SERPENT EAGLE <i>Spilornis cheela</i> II	R	2	600
EASTERN MARSH HARRIER <i>Circus (aeruginosus) spilonotus</i> II	P	4–6	100–300
HEN HARRIER <i>Circus cyaneus</i> II	P	5, 6	60–100
CHINESE SPARROWHAWK <i>Accipiter soloensis</i> II	S	1–7, 10	100–900
JAPANESE SPARROWHAWK <i>Accipiter gularis</i> II	P	4	400
EURASIAN SPARROWHAWK <i>Accipiter nisus</i> II	W	1, 3, 5, 6	100–800
GREY-FACED BUZZARD <i>Butastur indicus</i> II	S, P	1–5, 7–8	100–1,100
COMMON BUZZARD <i>Buteo buteo</i> II	P	1–6	100–800
GOLDEN EAGLE <i>Aquila chrysaetos</i> I	R	5	450
* BONELLI'S EAGLE <i>Hieraaetus fasciatus</i> II	R	4	400
COMMON KESTREL <i>Falco tinnunculus</i> II	R	1–9	60–1,000
AMUR FALCON <i>Falco amurensis</i> II	P	2, 5, 6	60–400
EURASIAN HOBBY <i>Falco subbuteo</i> II	P	4	400
LITTLE GREBE <i>Tachybatus ruficollis</i>	W, R	2, 3, 5, 6	60–400
GREAT CRESTED GREBE <i>Podiceps cristatus</i>	W	6	60–100
BLACK-NECKED GREBE <i>Podiceps nigricollis</i>	W	6	60–100
GREAT CORMORANT <i>Phalacrocorax carbo</i>	W, P	6	60–100
LITTLE EGRET <i>Egretta garzetta</i>	S	4–6, 8	60–250
GREY HERON <i>Ardea cinerea</i>	W	6	60–100
GREAT EGRET <i>Casmerodius albus</i>	P	3–6, 8	60–450
INTERMEDIATE EGRET <i>Mesophoyx intermedia</i>	S	5, 6, 8	60–450
CATTLE EGRET <i>Bubulcus ibis</i>	S	2–6, 8	60–450
CHINESE POND HERON <i>Ardeola bacchus</i>	S	2–6, 8	60–450
STRIATED HERON <i>Butorides striatus</i>	S	6	60

Species	Seasonal status <sup>1</sup>	Site <sup>2</sup>	Elevation (m)
BLACK-CROWNED NIGHT-HERON <i>Nycticorax nycticorax</i>	S	2–6, 8, 10	60–600
YELLOW BITTERN <i>Ixobrychus sinensis</i>	S	6	60
CINNAMON BITTERN <i>Ixobrychus cinnamomeus</i>	S	6	60
GREAT BITTERN <i>Botaurus stellaris</i>	W	6	60–100
FAIRY PITTA <i>Pitta nympha</i> VU, II	S	5	150–400
TIGER SHRIKE <i>Lanius tigrinus</i>	S	4, 5	100–250
BULL-HEADED SHRIKE <i>Lanius bucephalus</i>	W	4, 5	150–400
BROWN SHRIKE <i>Lanius cristatus</i>	P	3, 5, 6	60–600
LONG-TAILED SHRIKE <i>Lanius schach</i>	R	1–10	60–800
CHINESE GREY SHRIKE <i>Lanius sphenocercus</i>	W	6	60–100
EURASIAN JAY <i>Garrulus glandarius</i>	R	1–3, 5, 7–10	100–1,300
RED-BILLED BLUE MAGPIE <i>Urocissa erythrorhyncha</i>	R	1–5, 7–10	100–1,300
AZURE-WINGED MAGPIE <i>Cyanopica cyana</i>	R	5, 6, 8	60–150
BLACK-BILLED MAGPIE <i>Pica pica</i>	R	1–10	60–1,300
LARGE-BILLED CROW <i>Corvus macrorhynchos</i>	R	1, 3, 5, 10	100–800
COLLARED CROW <i>Corvus torquatus</i>	R	2, 5, 6, 10	60–300
BLACK-NAPED ORIOLE <i>Oriolus chinensis</i>	S	3, 5, 8	60–400
BLACK-WINGED CUCKOOSHRIKE <i>Coracina melaschistos</i>	S	5	200
SWINHOLE'S MINIVET <i>Pericrocotus cantonensis</i>	S	2, 3, 5, 10	60–400
LONG-TAILED MINIVET <i>Pericrocotus ethologus</i>	P	3, 5	400–800
BLACK DRONGO <i>Dicrurus macrocercus</i>	S	3–7, 10	60–200
ASHY DRONGO <i>Dicrurus leucophaeus</i>	S	3, 5	60–250
SPANGLED DRONGO <i>Dicrurus hottentottus</i>	S	5, 7	150–800
ASIAN PARADISE-FLYCATCHER <i>Terpsiphone paradisi</i>	S	5	100
BROWN DIPPER <i>Cinclus pallasi</i>	R	1, 4, 9, 10	400–1,000
BLUE ROCK THRUSH <i>Monticola solitarius</i>	S	1, 3	200–1,100
BLUE WHISTLING THRUSH <i>Myophonus caeruleus</i>	S	3, 5, 7, 9, 10	150–1,300
ORANGE-HEADED THRUSH <i>Zoothera citrina</i>	S	5, 9	250–400
GREY-BACKED THRUSH <i>Turdus hortulorum</i>	P	5	150
JAPANESE THRUSH <i>Turdus cardis</i>	S	5	100–200
EURASIAN BLACKBIRD <i>Turdus merula</i>	R	5, 6	60–200
DUSKY THRUSH <i>Turdus naumanni</i>	W	1, 4, 5	100–800
PALE THRUSH <i>Turdus obscurus</i>	P	5	200
* BROWN-CHESTED JUNGLE FLYCATCHER <i>Rhinomyias brunneata</i> VU	S	5	200–400
SOOTY FLYCATCHER <i>Muscicapa sibirica</i>	P	5	100
ASIAN BROWN FLYCATCHER <i>Muscicapa dauurica</i>	P	1, 2, 5, 7	60–400
YELLOW-RUMPED FLYCATCHER <i>Ficedula zanthopygia</i>	S	3, 5, 6, 7	100–800
* ELISE'S FLYCATCHER <i>Ficedula (narcissina) elisae</i>	P	5	200
MUGIMAKI FLYCATCHER <i>Ficedula mugimaki</i>	P	5, 10	150–300
RED-THROATED FLYCATCHER <i>Ficedula parva</i>	P	5	150
BLUE-AND-WHITE FLYCATCHER <i>Cyanoptila cyanomelana</i>	P	5, 7, 8	350
*GREY-HEADED CANARY FLYCATCHER <i>Culicicapa ceylonensis</i>	V	5	150
RUFIOUS-TAILED ROBIN <i>Luscinia sibilans</i>	P	5	150
SIBERIAN BLUE ROBIN <i>Luscinia cyane</i>	P	5, 9	200–350
ORANGE-FLANKED BLUE ROBIN <i>Tarsiger cyanurus</i>	P	1–5, 7	150–800
ORIENTAL MAGPIE ROBIN <i>Copsychus saularis</i>	R	3, 4–6	60–250
DAURIAN REDSTART <i>Phoenicurus auroreus</i>	P, W	1, 4–8, 10	100–800
WHITE-CAPPED WATERSTART <i>Chaimarrornis leucocephalus</i>	R	2, 3, 5, 7, 10	400–800
PLUMBEOUS WATER REDSTART <i>Rhyacornis fuliginosus</i>	R	1–10	150–1,250
LITTLE FORKTAIL <i>Enicurus scouleri</i>	R	5	400

Species	Seasonal status <sup>1</sup>	Site <sup>2</sup>	Elevation (m)
WHITE-CROWNED FORKTAIL <i>Enicurus leschenaulti</i>	R	3, 5, 7, 9	150–800
COMMON STONECHAT <i>Saxicola torquata</i>	P	5, 6	60–200
GREY BUSHCHAT <i>Saxicola ferrea</i>	S	9, 10	300–600
RED-BILLED STARLING <i>Sturnus sericeus</i>	R	3, 4–9	60–400
WHITE-CHEEKED STARLING <i>Sturnus cineraceus</i>	R	1, 5, 6	60–150
CRESTED MYNA <i>Acridotheres cristatellus</i>	R	1	60–400
EURASIAN NUTHATCH <i>Sitta europaea</i>	R	1, 2, 5	100–1,100
WINTER WREN <i>Troglodytes troglodytes</i>	R	5, 9	250–400
MARSH TIT <i>Parus palustris</i>	R	1, 5	200–450
YELLOW-BELLIED TIT <i>Parus venustulus</i>	W	2–5	200–600
GREAT TIT <i>Parus major</i>	R	1–10	60–800
LONG-TAILED TIT <i>Aegithalos caudatus</i>	R	1, 4, 5	200–1,000
BLACK-THROATED TIT <i>Aegithalos concinnus</i>	R	3, 5, 7–9	100–800
SAND MARTIN <i>Riparia riparia</i>	S	5, 6	100
BARN SWALLOW <i>Hirundo rustica</i>	S	3, 5, 6, 8, 10	60–400
RED-RUMPED SWALLOW <i>Hirundo daurica</i>	S	4, 5, 10	60–650
ASIAN HOUSE MARTIN <i>Delichon dasypus</i>	S, P	3, 5, 8	600–800
GOLDCREST <i>Regulus regulus</i>	W	5	200
COLLARED FINCHBILL <i>Spizixos semitorques</i>	R	2–5, 7–10	200–800
BROWN-BREASTED BULBUL <i>Pycnonotus xanthorrhous</i>	R	2, 5, 8	100–400
LIGHT-VENTED BULBUL <i>Pycnonotus sinensis</i>	R	1–10	60–800
BLACK BULBUL <i>Hypsipetes leucocephalus</i>	S	3, 5	200–400
ZITTING CISTICOLA <i>Cisticola juncidis</i>	S	6	100
* STRIATED PRINIA <i>Prinia criniger</i>	R	6	60
CHESTNUT-FLANKED WHITE-EYE <i>Zosterops erythropleurus</i>	P	4	300
JAPANESE WHITE-EYE <i>Zosterops japonicus</i>	S, P	2, 3, 5, 7	100–800
ASIAN STUBTAIL <i>Urosphena squameiceps</i>	P	5	150
MANCHURIAN BUSH WARBLER <i>Cettia canturians</i>	S	2, 5, 7	200–800
BROWNISH-FLANKED BUSH WARBLER <i>Cettia fortipes</i>	S	3, 5, 7–10	100–1,200
LANCEOLATED WARBLER <i>Locustella lanceolata</i>	P	5	150
ORIENTAL REED WARBLER <i>Acrocephalus orientalis</i>	S	6	60–150
* COMMON CHIFFCHAFF <i>Phylloscopus collybita</i>	V	5	150
DUSKY WARBLER <i>Phylloscopus fuscatus</i>	P	4	100
PALLAS'S WARBLER <i>Phylloscopus proregulus</i>	P, W	1, 4, 5	100–400
YELLOW-BROWED WARBLER <i>Phylloscopus inornatus</i>	P, W	1–5, 7	100–550
ARCTIC WARBLER <i>Phylloscopus borealis</i>	P	5, 10	100–400
TWO-BARRED WARBLER <i>Phylloscopus plumbeitarsus</i>	P	5	250
*CHINESE LEAF WARBLER <i>Phylloscopus yunnanensis</i>	P	4	450
EASTERN CROWN WARBLER <i>Phylloscopus coronatus</i>	P	3, 5, 8	200–800
CLAUDIA'S LEAF WARBLER <i>Phylloscopus claudiae</i>	P	3–5, 9–10	150–700
RUFIOUS-FACED WARBLER <i>Abroscopus albogularis</i>	P	2, 3, 5	150–800
MASKED LAUGHINGTHRUSH <i>Garrulax perspicillatus</i>	P	4–6	60–400
CHINESE HWAMEI <i>Garrulax canorus</i>	R	3, 5, 9, 10	100–800
STREAK-BREASTED SCIMITAR BABBLER <i>Pomatorhinus ruficollis</i>	R	2–5, 7–10	100–800
RED-BILLED LEIOTHRIX <i>Leiothrix lutea</i>	R	7	600
VINOUS-THROATED PARROTBILL <i>Paradoxornis webbiana</i>	R	1–10	60–450
EURASIAN SKYLARK <i>Alauda arvensis</i>	P, W	6	60
ORIENTAL SKYLARK <i>Alauda gulgula</i>	S	3, 6	60–150
WHITE-RUMPED MUNIA <i>Lonchura striata</i>	R	2, 6	60–200
RUSSET SPARROW <i>Passer rutilans</i>	R	2–5, 9, 10	60–400



Species	Seasonal status <sup>1</sup>	Site <sup>2</sup>	Elevation (m)
EURASIAN TREE SPARROW <i>Passer montanus</i>	R	1–8	60–300
FOREST WAGTAIL <i>Dendronanthus indicus</i>	S	3, 5, 9, 10	60–800
WHITE WAGTAIL <i>Motacilla alba</i>	S	1–10	60–600
YELLOW WAGTAIL <i>Motacilla flava</i>	P	6	60
GREY WAGTAIL <i>Motacilla cinerea</i>	S	2, 3, 5, 10	100–800
RICHARD'S PIPIT <i>Anthus richardi</i>	P	5, 6	60–150
OLIVE-BACKED PIPIT <i>Anthus hodgsoni</i>	P	3, 5, 7–9	150–800
WATER PIPIT <i>Anthus spinoletta</i>	W	6	60–100
BUFF-BELLIED PIPIT <i>Anthus rubescens</i>	W	6	60–100
BRAMBLING <i>Fringilla montifringilla</i>	W	4, 5	100–800
GREY-CAPPED GREENFINCH <i>Carduelis sinica</i>	R, W	1–6	60–500
EURASIAN SISKIN <i>Carduelis spinus</i>	W	4, 5	150–400
HAWFINCH <i>Coccothraustes coccothraustes</i>	P	5	150
YELLOW-BILLED GROSBEAK <i>Eophona migratoria</i>	P, S	5, 7	60–400
* JAPANESE GROSBEAK <i>Eophona personata</i>	P	5	200
* SLATY BUNTING <i>Latoucheornis siemsseni</i>	S	10	1,100
GODLEWESKI'S BUNTING <i>Emberiza godlewskii</i>	R	1	800
MEADOW BUNTING <i>Emberiza cioides</i>	R	1, 3, 4, 5, 7, 10	100–600
TRISTRAM'S BUNTING <i>Emberiza tristrami</i>	P	5	250
LITTLE BUNTING <i>Emberiza pusilla</i>	P, W	3–5	150–400
YELLOW-BROWED BUNTING <i>Emberiza chrysophrys</i>	P	5	200
RUSTIC BUNTING <i>Emberiza rustica</i>	W	6	60–100
YELLOW-THROATED BUNTING <i>Emberiza elegans</i>	P, W	1–3, 5, 7, 8, 10	150–800
CHESTNUT BUNTING <i>Emberiza rutila</i>	P	5	150
BLACK-FACED BUNTING <i>Emberiza spodocephala</i>	P, W	6	60–100
PALLAS'S BUNTING <i>Emberiza pallasi</i>	P, W	6	60–100

<sup>1</sup> Seasonal status (assigned mainly based on Cheng 1987 and MacKinnon and Phillipps 2000, supplemented by our field observations): R=Resident, P=Passage, S=Summer breeder, W=Winter visitor, V=Vagrant

<sup>2</sup> International threat category and conservation status in China. IUCN Red List categories EN: Endangered, VU: Vulnerable, NT: Near Threatened; and Classes I and II in the List of Wildlife under Chinese National Priority Protection.

<sup>3</sup> Site codes are as in Fig 1.

\* Species new to the Dabie Shan range.