CONSERVATION NEWS

The troubled Baer's Pochard *Aythya baeri*: cause for a little optimism?

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Baer's Pochard *Aythya baeri* came into sharp focus in 2012 when it was listed Critically Endangered (BirdLife International 2015), following the assessment by Wang *et al*. (2012). The situation was extremely serious (Hearn *et al*. 2013) and whilst the knowledge gained since then means we can allow ourselves a slightly more optimistic outlook for this species, the situation has not changed significantly and the species remains close to extinction in the wild. This article updates progress made since 2013 with conservation planning and action, and looks forward to the critical issues that need to be addressed in the next 1–2 years.

The most important development has been the preparation of a Single Species Action Plan (SSAP) for Baer's Pochard and the establishment of a Task Force under the East Asian – Australasian Flyway Partnership (EAAFP) to oversee its implementation. The SSAP brings together existing knowledge about the species and the threats it faces, and sets out actions that need to be taken in order to address these threats and restore the species to a favourable conservation status. It also provides a basis for engagement with the countries where the species occurs (range states) and others able to positively influence the effectiveness of conservation actions. This SSAP was adopted by the EAAFP in January 2015 at their eighth Meeting of Parties and will be published shortly by EAAFP and the Convention on the Conservation of Migratory Species of Wild Animals (CMS). Implementation of the actions has yet to begin in earnest, but the EAAFP Baer's Pochard Task Force (BPTF) has now been established and will meet in early 2016 to begin this work—for further information see http://www.eaaflyway.net/our-activities/task-forces/baers-pochard-task-force/ .

The SSAP identifies a number of critical, additional and potential threats facing Baer's Pochard (Table 1). Many of these are poorly understood as little quantified data exists on the causes of the species's decline. However, the principal threats are thought to be habitat loss and degradation, particularly from drainage and rice cultivation, and unsustainable exploitation for food, both of fledged birds and eggs. Disturbance may also be significant at some sites; many wetlands in China and in countries further south have large human populations living in close proximity, and many of these communities make direct use of these wetlands, particularly for harvesting food or for transport.

It is thought probable that habitat loss and degradation was the main cause of decline during earlier decades (up to the 1990s), but that more recently the harvesting of birds and eggs for food may have become a more significant factor. However, little quantitative or causal information exists for these factors, so their relative importance in the decline of Baer's Pochard cannot currently be fully determined. There is also little information with which to determine whether the major threats are operating predominantly on the breeding or wintering areas, or at stop-over or moulting sites. It is probable that they are having impacts

Plate 1. Male Baer's Pochard *Aythya baeri* with Philippine Duck *Anas luzonica*, Candaba, Pampanga, Philippines, February 2015.

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Plate 2. Male Baer's Pochard, Tokyo, January 2015. The dark green of the head shows best in bright light.

throughout the flyway, particularly in China. Recently, mainly since the 1960s, habitat loss and degradation has occurred on a massive scale in north-east China and in the Yangtze floodplain, and harvesting of birds and eggs is thought to be widespread in these regions, particularly in the last 10–15 years. Thus, it would seem quite possible that the long-term decline has been caused (at least in part) by habitat loss, and the recent apparent increase in the rate of decline may be due to the additional effect of over-harvesting of what is now a small and localised population.

It is notable that compared to most other migratory ducks in East Asia, Baer's Pochard has a more southerly distribution, with a large proportion of its breeding range in China rather than Russia. Given the extent of habitat loss and harvesting in China, this may explain why the species seems to have experienced such a catastrophic decline in numbers compared with the other migratory East Asian ducks. But it is important to note, however, that count data for most East Asian ducks are insufficient to quantify population trends, and some other duck species, such as the East Asian population of Garganey *Anas querquedula*, are also believed to be declining rapidly (P. Round pers. comm.).

Other threats, and threats in countries to the south of China where the species winters, or formerly wintered, are even less well known. However, it is believed that the two threats mentioned above are the most critical. In order to avert the extinction of Baer's Pochard in the wild, action is urgently needed to address both these factors, as well as determine more precisely the nature of all threats faced by the species (Table 1).

One of the most disturbing facts highlighted in 2012–2013 was just how few Baer's Pochard were seen in the wild, either in the breeding season or the wintering range. In 2012–2013, surveys and searches in China, focused on the central and lower Yangtze, located only 43 individuals. Since then, however, greater awareness of the importance of looking for Baer's Pochard and reporting all sightings has resulted in an improved understanding of the number of birds remaining; a coordinated waterbird census of the central and lower Yangtze in January 2015, organised by WWF China (Wuhan office), located 125 individuals, half of which were at Chong Hu in Hubei province. At the same time, about 105 individuals were known to be wintering at other Chinese sites, including 84 at Taibai Hu in Shandong province, and with a few reports from elsewhere the final total was 238 birds (Table 2).

Table 1. The importance of threats at country level (from EAAFP/CMS Baer's Pochard SSAP).
Key: Range states: BA: Bangladesh, CN: China, DPRK: Democratic People's Republic of Korea, IN: India, MY: Myanmar, ROK: Republic of Korea, RU: Russia, TW: Taiwan, TH: Thailand, VN: Vietnam. Threat status: H: High, M: Medium, L: Low, U: Unknown.

	Breeding range		Wintering range								
	CN	**RU**	**BA**	**CN**	**DPRK**	**IN**	**MY**	**ROK**	**TW**	**TH**	**VN**
Critical threats											
Habitat loss and degradation	H	M	M	H	M	M	M	M	M	M	M
Unsustainable harvesting	H	L	L	H	U	L	M	L	L	L	U
Additional threats											
Inadequate site protection and management	H	M	M	H	M	M	M	M	M	M	M
Disturbance and recreation	M	L	M	H	M	M	M	M	M	M	M
Lack of awareness	H	H	H	H	H	H	H	H	H	H	H
Policy obstacles	H	M	M	H	M	M	M	M	M	M	M
Potential threats											
Hybridisation	U	L	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Pesticides and fertilisers	H	L	U	H	U	U	M	U	U	U	U

Table 2. Peak counts of Baer's Pochard at known wintering sites in 2014–2015.

Country	Province	Site	Date (of peak count)	Count (males/females)
China	Hubei	Longgan Hu	1 January 2015	3 (3/0)
China	Hubei	Zhangdu Hu	13 January 2015	19 (8/11)
China	Hubei	Wang Hu	11 January 2015	3
China	Hubei	Hong Hu	14 January 2015	2
China	Hubei	Chong Hu, Gong'an	16 January 2015	68
China	Jiangxi	Poyang Hu	16 January 2015	30
China	Shandong	Taibai Hu, Jining	Decembe5 2014 to January 2015	84
China	Tianjin	Beidagang	mid-January to mid-March 2015	18 (17/1)
China	Yunnan	Songming, Kunming	22 January 2015	1
China	Guangdong	Zhanjiang	mid-January 2015	5
India	Assam	Tinsukia	31 January 2015	3 (3/0)
Myanmar	Katchin	Indawgyi Lake	January 2015	1 (0/1)
Philippines	Pampanga	Candaba Marsh	31 January 2015	1 (1/0)
Total				**238**

This is of course an improvement on 2012–2013, but remains significantly lower than the number of birds known to be wintering in the central and lower Yangtze in 2010–2011, despite an increase in search effort. However, even with this increased effort, there is still every chance that birds are being overlooked at wintering sites and so continued searches by birdwatchers in any possible areas, as well as those locations known to have recently held wintering birds, are essential (see below).

There can be no doubt that not all breeding sites are known. The winter counts confirm that there are more than 200 birds in the population; however, relatively few of these can be accounted for during the breeding season. In the past three years it has become clear that the most important known breeding site is Hengshui Hu, in China's Hebei province, where in recent breeding seasons around 20–30 birds have been seen in spring and up to 65 in late summer. However, as yet breeding has not been confirmed at the site, although it is strongly suspected to take place. At other sites in China where Baer's Pochard have been observed in summer, sightings since 2012 have been less regular. Eight sites are known to have held one or more birds between May and August, but none have been occupied in more than two of the last four years (2012–2015). However, more information is needed on when birdwatchers have visited these sites; currently it is not possible to determine whether the apparent lack of birds relates to an actual lack of birds or a lack of surveys.

Readers: if you have visited these parts of China during the last four years (2012–2015) please will you send details of locations and date of visit(s), even if no Baer's Pochard were seen. Email: monitoring@wwt.org.uk

One additional exciting development is that in 2014 birdwatchers in Hubei province discovered a significant new breeding site near Huangpi, Wuhan (see pages 84–86). This site appears to be almost as important as Hengshui Hu, with about 30 birds observed there in spring 2015 and seven or eight pairs probably attempted to breed. Its location in the central Yangtze floodplain, an area traditionally

Plate 3. Female Baer's Pochard (left) with male Ferruginous Duck *Aythya nyroca*, Maguri Beel, Tinsukhia, Assam, India, February 2015.

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recognised as part of the wintering range of Baer's Pochard, poses interesting questions about where the species breeds, particularly as most other recent records of breeding/summering Baer's Pochard are also to the south of their traditionally recognised breeding range. Hengshui Hu is 300 km south of Beijing but the site at Huangpi is another 800 km further south. In addition, summering birds have been recorded during 2013–2015 at a further four sites between Beijing and the central Yangtze floodplain. Do these observations indicate that we have previously overlooked the species in this area, or is this a shift in distribution in response to a lack of suitable breeding habitat in its traditional range? Ornithological knowledge of breeding waterbirds in central China is limited and there is a chance the species could have long been overlooked (J. Lei pers. comm.). Given this, it seems we have a much larger search area within which to survey for breeding sites, and this also has the potential to significantly influence our understanding of threats and the required conservation response.

Only one site of potential significance has been identified recently in the traditional breeding range, near Khasan in the very south-east of Russia, near the borders with China and Democratic People's Republic of Korea (Solovyeva *et al*. 2013). Several birds were observed there during the breeding season in 2013 and 2014, although breeding has not been confirmed (S. Surmach pers. comm.). Extensive searches in the central Amur floodplain, south-east Russia, in 2013 and 2015 located just a single female at Muraviovka Park in 2013 (Heim *et al*. 2013, Solovyeva *et al*. 2013, W. Heim pers. comm.).

Given the continued lack of observations, particularly during the breeding season, it remains possible that the global captive population of Baer's Pochard could play an important part in its conservation. Thus, effort has been made to enhance the management of this stock, including the appointment of studbook keepers by the European Association of Zoos and Aquaria (EAZA) and the Association of Zoos and Aquariums (AZA) in North America. In addition, a genetic study of the 72 captive birds held by Wildfowl & Wetlands Trust (WWT)—around one third of the global captive stock—funded by the Oriental Bird Club, has also been carried out. Samples of all extant *Aythya* and *Netta* species were analysed by experts at Cardiff University and it was found that (based on the microsatellite markers used) there was no evidence for extensive hybridisation among the WWT captive stock. Furthermore, despite a relatively small number of founder individuals and several decades of captive breeding, there was no evidence of inbreeding. Genetic drift has, however, caused significant differences in genetic diversity between wild and captive Baer's Pochard. To alleviate this problem and ensure a more representative founder population is developed for future captive breeding, emphasis should be put on identifying individual Baer's Pochard that best represent the genetic variation found in the wild population. For this, a key requirement is to collect samples from the current wild population and re-analyse data to test for any distinctions between the museum specimen samples used to date and the current wild population. In addition, the use of more microsatellite markers would enable a more detailed examination of the genetic distinction between wild Baer's Pochard and Ferruginous Duck *Aythya nyroca*, as current microsatellite results indicate these species are very closely related.

(See Plates 5–10, page 82 for comparisons of these two species.)

In response to the conservation needs of Baer's Pochard, a number of actions are scheduled to take place in 2016. A census of key sites in Myanmar, where wintering birds may still occur, will be undertaken by the Biodiversity and Nature Conservation Association (BANCA; http://www.banca-env.org/) in January 2016. No other

Plate 4. Group of Ferruginous Ducks, Gajoldoba, Teesta Barrage, Jalpaiguri, West Bengal, India, January 2015.

OMPRAKASH HATUA

ZHANG MING

Plate 5. Male Baer's Pochard, Liaoning province, north China, March 2011. In contrast to Plate 2, the head appears black in poor light.

JAINY KURIAKOSE

Plate 6. Male Ferruginous Duck *Aythya nyroca*, near Talwara, Himachal Pradesh, India, January 2015. Note the white eye and the white on the stern.

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Plate 7. Female Baer's Pochard, Mai Po, Hong Kong, February 2012.

JAINY KURIAKOSE

Plate 8. Female Ferruginous Duck, near Talwara, Himachal Pradesh, India, January 2015. Note the dark eye which distinguishes female from male.

Plate 9. Male Baer's Pochard, Konkou, Okayama prefecture, Japan, February 2012. Note underwing pattern.

MARK CURLEY

Plate 10. Male Ferruginous Duck, Mai Po, Hong Kong, August 2014. Note similarity of underwing to Baer's Pochard.

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coordinated surveys are scheduled to take place in winter 2015–2016, but birdwatchers who are able to check known wintering sites, or any others that may hold Baer's Pochard, are strongly encouraged to do so, ideally during mid-January so we can get the best possible estimate of the total population.

Readers please note: when counting Baer's Pochard, in addition to the standard information (location, date, flock size, etc) please also make every attempt to record the sex ratio of the flock as this could provide valuable information on the structure of the population. Please report your observations to the BPTF as soon as possible. Email: monitoring@wwt.org.uk.

In summer 2016 a census of (or search for) breeding areas will also take place. Details are still being developed, but the priority region is northern China and we hope coverage will be comprehensive. Birdwatchers can help with this too as we will need people to undertake surveys. Further information will be available via the BPTF in due course—if you are interested to help, please refer to the website.

Activities to address threats that will be developed in the near future include the protection of key sites, particularly Huangpi, Wuhan, Hubei province, where around half of the habitat used by Baer's Pochard was lost between 2014 and 2015. Engagement with the State Forestry Administration in China is underway with a view to ensuring this site continues to offer a secure environment for the species to breed. Research into specific threats will also be initiated; one of the most important is to understand the threat posed by harvesting, because the current lack of knowledge makes remedial actions difficult to develop. In particular, there is an urgent need to understand the nature of existing and likely future market demand, and the associated socio-economic drivers throughout the supply chain.

Baer's Pochard remains one of the most threatened waterbirds in the world. The new knowledge about its status and the actions to address threats that have now been initiated both provide a little more cause for optimism than we had in 2012. However, much still needs to be urgently done in order to safeguard the wild population; the Baer's Pochard Task Force will be busy.

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References

Hearn, R. D., Tao X. & Hilton, G. (2013) A species in serious trouble: Baer's Pochard *Aythya baeri* is heading for extinction in the wild. *BirdingASIA* 19: 63–67.

Heim, W., Wolanska, K., Siegmund, A. & Schuster, U. (2013) Possible breeding of Baer's Pochard *Aythya baeri* at Muraviovka Park, Far East Russia. *BirdingASIA* 20: 64–66.

Solovyeva, D., Antonov, A., Goroshko, O., Pronkevich, V. & Surmach, S. (2013) Emergency measures to save Baer's Pochard: location of breeding sites in Russia. Unpublished report. Institute of Biological Problems of the North, Magadan.

Wang X., Barter, M., Cao L., Lei J. & Fox, A. D. (2012) Serious contractions in wintering distribution and decline in abundance of Baer's Pochard *Aythya baeri*. *Bird Conserv. Internatn*. 22: 121–127.

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