

**RANGE EXPANSION OF THE MANDARIN DUCK  
*AIX GALERICULATA* (AVES: ANSERIFORMES:  
ANATIDAE) TO THE LENA RIVER CATCHMENT,  
SIBERIA**

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The Mandarin Duck *Aix galericulata* is listed as Least Concern with the population decrease trend (BirdLife International 2012). Meanwhile, the breeding number in low and middle reaches of Amur River catchment increased gradually since the 1980s (Danilov-Danilyan et al. 2001). The increase was followed by westward extension of the breeding range, which was not mentioned in the last version of IUCN Red List of Threatened Species (Fig. 1, Vischnyakov et al. 2012; BirdLife International 2012). The term “extent of occurrence” is used as defined by IUCN Red List Categories and Criteria (IUCN 2012). This short paper reports recent evidence of the species occurrence further north of its known breeding range in temperate broadleaf and mixed forests. This paper was based on the occurrence of Mandarin Duck documented within the Lena River basin: (1) Author’s recognition of two males shot reportedly from pairs on 13 May 2010 and 17 May 2011 in the lower reaches of Maya River (tributary of the Aldan River, 59°45’N & 134°55’E); (2) 51 sightings reported by experienced birdwatchers through personal communications summarized in the Table 1; (3) three occurrences plausibly reported at the regional hunter

Internet forum (Table 1, Okhota i ryibalka <http://forum.ykt.ru/viewforum.jsp?id=16>).

In the 2000s the Mandarin Duck was reported within the area shown on Fig. 1 in the Lena River basin. Most of the records were considered anecdotal notes and thus this documented range extension cannot delineate the actual distribution of this duck. The majority of recent records

are from the most highly populated areas. Based on summer and autumn occurrences (including brood-like small flocks) we suggested that the upper and middle reaches of Aldan River and tributaries the Timpton Maya and Uchur rivers (up to 60°N) should be included as regular summer range and possibly as breeding range of the Mandarin Duck (Fig. 1). Pairs and solitary males recorded further north of 60°N were probably vagrant.

In the 1970s the Mandarin Duck was considered a “rare vagrant” in the southernmost margin of the Lena River basin (Tolchin & Pyizchyanov 1979). In the following 20 years the range expansion to the west was reported within the Amur River basin and with the increase in numbers the duck surmounted the divide between Amur and Lena rivers to colonize the upper reaches of the Olyekma River, where it was probably breeding (Fig. 1, Vischnyakov et al. 2012). Despite its regular occurrence in Transbaikalia the Mandarin Duck has never been reported on the eastern coast of Lake Baikal (Pronin 2013). It seems the mountains around Baikal do not suit the species habitat requirements. This is likely to be a reason why the species commenced to settle northward in the Lena River basin going



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presumably along largest tributaries Aldan and Olyekma.

In the Amur River basin The Mandarin Duck inhabits broadleaf and mixed forests alongside smoothly flowing streams and other waterbodies, and avoids open areas and dark-coniferous forest (Mikhailov & Shibnev 1998; Danilov-Danilyan et al. 2001; Kostenko 2005). The duck nests in tree cavities, primarily in oaks, elms or poplars. In the newly-colonized area in Transbaikalia the species was

reported from the light-coniferous forest (Vischnyakov et al. 2012). In the Lena River, basin branching river reaches with poplar woodlands and holms or burnt larch-forest spots were found to be similar to those habitats in the Amur River basin (including Tranbikalia section) and occur quite often. Thus the duck could be breeding within the range of expansion, which is more likely if the number in the Amur River basin increases.

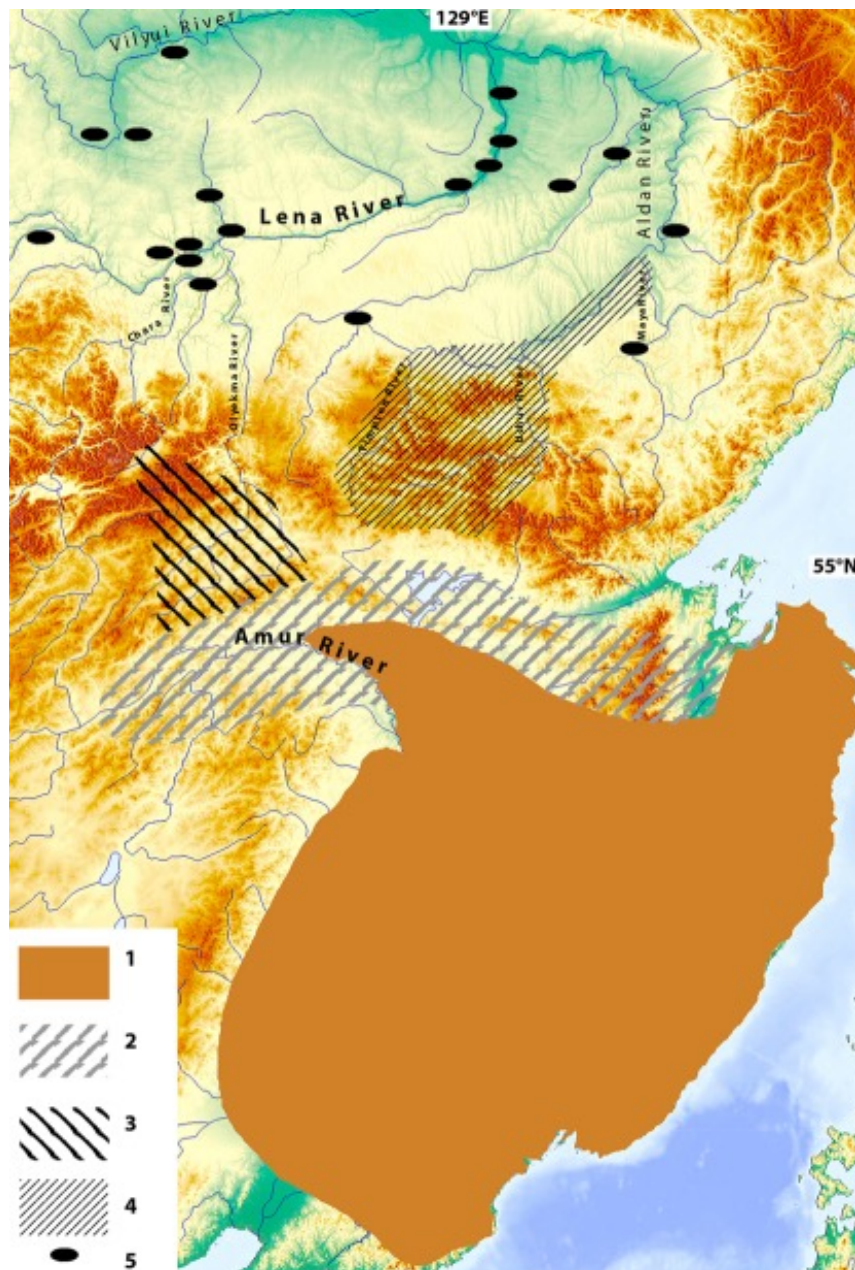


Fig. 1. Extant distribution of the Mandarin Duck in Siberia and Far East. 1 – Continental breeding range as suggested by the last version of IUCN Red List of Threatened Species (BirdLife International 2012); 2 – Breeding range extending since the 1980s (Kozhemyako et al. 2009; Vischnyakov et al. 2012); 3 – Extent of occurrence in the Olyekma River upper reaches, 1980s–2000s (Vischnyakov et al. 2012); 4 – Extent of occurrence in the Aldan River upper and middle reaches, and its tributaries in the 2000s and 2010s; 5 – Cases of vagrancy in the Lena River basin in the 2000s and 2010s.

Table 1. The Mandarin Duck occurrences within the bounds of the Lena River catchment

Location	Date	Count	Informant
The Aldan River upper and middle reaches basin between 56°–61°N & 125°–136°E	Spring 1998	Several	A.A. Erschov
	End of May 2002–2014	Annually 1 and/or 2 (pair) at the minimum	D.I. Berezovsky
	End of September beginning of October 2002–2014	Annually 1 and/or 2 (pair)	D.I. Berezovsky
	End of May 2012 and 2013	5 and 6	D.I. Berezovsky
	September 9, 2011	2	D.N. Martynov
	Mid-September 2008	4	D.N. Martynov
	Mid-May 2006	1	A.G. Takhvatulin
	Mid-June 2004	1	A.G. Takhvatulin
The Lena River upper reaches and neighbouring areas between 59°–61°N & 113°–121°E	September 2008	4	A.G. Takhvatulin
	Beginning of May 2001	1	A.P. Isaev
	May 15, 2010	2 (pair)	V.V. Nikolaev
	Spring 2011	1	V.V. Nikolaev
	May 4, 2013	16	V.V. Nikolaev
	End of May 2014	2 (pair)	V.V. Nikolaev
	20 April 2014	2 (pair)	V.V. Nikolaev
The Lena River middle reaches and neighbouring areas between 61°–63°N & 129°–133°E	May 17, 2014	2 (pair)	A.K. Antonov
	Mid-May 2005	1	A.P. Isaev
	May 18, 2013	1	A.K. Antonov
	May 17, 2014	1	A.K. Antonov
	May 16, 2014	1	A.K. Antonov
The Vilui River middle reaches between 62°–63°N & 117°–118°E	Spring 2000	1	The regional hunter Internet forum
	End of June 2010	2 (pair)	The regional hunter Internet forum
	2011 or 2010	1	The regional hunter Internet forum
	Mid-May 2013	1	A.K. Antonov
	Mid-May 2012	2 (pair)	A.K. Antonov

Our results indicate that the range of the Mandarin Duck has enlarged significantly in recent years, reaching at least 60°N. The extension was dramatic because: (1) the species moved nearly 10 degrees northward during 20 years; (2) it crossed the Amur basin boundaries penetrating to the Lena River basin; (3) it reached the middle taiga.

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