Veer dam as important winter migratory ground for Bar-headed Geese *Anser indicus* (Latham, 1790) Family: Anatidae, with special reference to observations of tagged Bar-headed Geese.

Ruta Bandivadekar[1], Rohan Pandit[2], Aditya Ponkshe[3] & Pranav Pandit[*4]

Veer dam (18^{0}07'39 N 74^{0}01'09 E) in the Satara District, Maharashtra, India is wintering ground for many migratory bird species. Even being well known water body for migratory birds, no literature is available regarding avian community at this important water body. Bar-headed Goose is one of the regular winter visitors to this wetland. Here we present our observations of Bar-headed Geese for constitutive three years.

Multiple visits were made to the wetland from November to March to count the largest congregation of bar-headed Geese during the period of study. Visits were made in early morning as well as in late evening. All the possible locations around the dam were visited during every visit. During the day time Bar-headed Geese were observed scattered all around the dam in smaller flocks of 50-100 birds. During the evening all the bar-headed geese congregated at one place and this behavior gave us chance to estimate approximate total number of Bar-headed Geese visiting the water body. During last three years there are few records of collared Bar-headed Geese at the same water body. Here we represent the approximate maximum numbers of bar-headed Geese observed during one wintering season along with observations of collared and ringed Bar-headed Geese in the year 2010-2011. Also we have compiled the ring recoveries of Bar-headed Geese at Veer dam for last three years.

On 9th January 2011 two Bar-headed Geese were found tagged in an isolated flock of around 36 birds. One with green neck collar and the other with green ring in the left tarsus. X37 (Green Collar) is male bird ringed at province Arkhangai, sumon Tariat, lake Kholboo nuur (47° 59'14,59"N, 99° 52'54,24"E) in Mongolia on 16 July 2010 (Figure 1).This bird was first noted on 5th of January 2011 by Rohan Pandit. S12 (Green ring) is female bird ringed at Centralen Mongolian in province Arkhangai, sumonUnder-Ulaan, lake Olon nuur (48°03'1,04"N, 100° 22'33,19"E) Mongolia on 9th July 2010 (Figure 2). Under the project conducted by Laboratory of Ornithology Institute of Biology MAS, Wildlife Science and Conservation Center Ulaanbaatar 51 Mongolia and Wetlands International 115 Bar-headed Geese were fitted with Neck Collars and 101 were fitted with leg rings. They all were sampled for HPAI H5N1 before releasing. The revisiting of C6 birds for two years and the sightings of new tagged Bar-headed Geese again at the same location from nearer breeding grounds in Mongolia is one of the most important findings in relation to the breeding and wintering grounds of these birds. Herb on which birds were grazing was also collected, and was identified as *Brassica* spp.

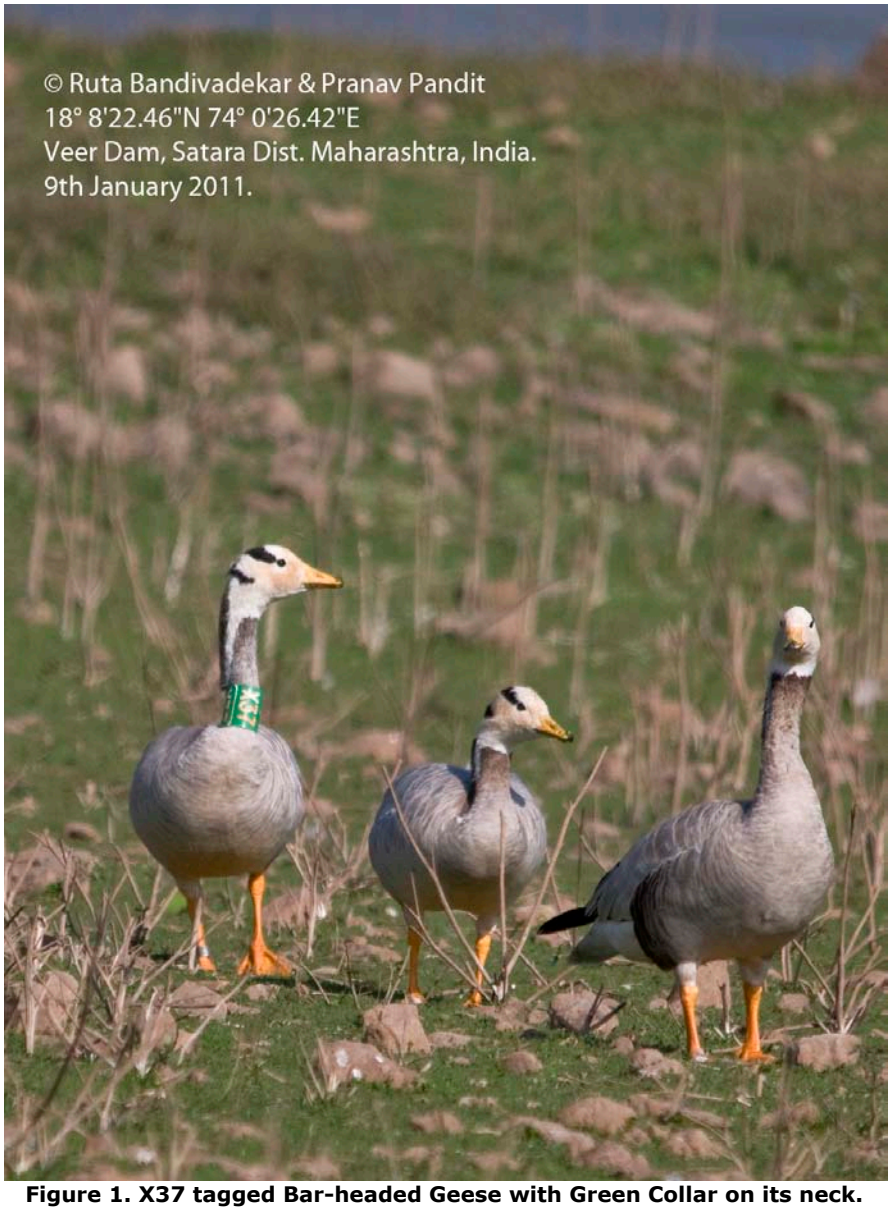

Figure 1. X37 tagged Bar-headed Geese with Green Collar on its neck.

The details of maximum number of birds in one congregation and the summary of collared or ringed birds observed are given in Table 1.

The estimated world population of Bar-headed Geese is 52-60 thousand (Bird Life International, 2009). Therefore the flock of observed on 19th January 2009 approximately represents about 0.81 to 0.93% of the World population of the Bar-headed Geese. The population size of this bird is declining. It has

[1]Bhageshree, Rambaug Colony, Paud Road, Pune. Email: rutz.vet@gmail.com, [2]B3, Sterling Homes, near Chaitanya Nagari, Waraje Naka, Pune. Email: rohanpandit87@gmail.com, [3]18 Raghav Raghuraj Housing Soc. opposite Big Bajar, Sinhagad Road Pune. Email: ponkshe.aditya@gmail.com and [4] A/15, Prathamesh Nagari, Anand Nagar, Sinhagad Road, Pune. Email: pranav.vet@gmail.com (Corresponding Author)

Figure 2. S12 tagged Bar-headed Geese with green ring on its left tarsus

Table 1: Largest Congregation of Bar-headed Geese observed in a migratory season along with the details of ringed birds observed

Year	2007-2008	2008-2009	2009-2010	2010-2011
Largest Congregation	NA	487 (19th January 2009)	225 (14th January 2010)	445 (8th February 2011)
Collared Bird Number	C-6 (Kasambe *et al.* 2008)	None	C-6	X-37 and S-7

suffered a severe reduction in numbers owing to over-hunting, unsustainable levels of egg collecting and habitat destruction (del Hoyo *et al.* 1992), and if the water body attracts same number of Bar-headed Geese every year then it might cross the 1% mark soon, which might categorize this water body as 'Important Bird Area' (IBA) by Criteria A4i (Bird Life International, 2009). There are around thirteen IBA sites based on Criteria A4i applied to Bar-headed Geese in India (Bird Life International, 2009). Out of which Nagi Dam and Nakti Dam Bird Sanctuary is categorized as IBA based only upon Criteria A4i for Bar-headed Goose (Bird Life International, 2009).

Such large congregations of these migratory birds also have a great significance livestock health; especially for poultry, which may contract some diseases from these wild birds or *vice versa*. This mainly includes Avian Influenza. Critical community size for avian influenza is considered to be 1200-1500 which can sustain the avian influenza virus in a community of birds (Guberti & Newman, 2007). Bar-headed Geese and Ruddy Shelduck *Tadorna ferruginea* which also is seen there is significant (Approximately - 400) are previously known to be positive for recently emerged H5N1 virus in China (Chen et al, 2005). Recent studies correlating migration and HPAI H5N1 outbreaks suggest that there could be sporadic transmission of H5N1during migration (Iverson *et al*, 2011). Hence such places should be constantly monitored for avian disease like Avian Influenza. Survey of wild migratory birds at same water body for highly pathogenic Avian Influenza in 2006-2007 showed absence of Influenza virus in migratory birds including Bar-headed Geese (Pawar *et al*, 2009).

A road connecting Shirwal and Baramati towns adjoins this water body. This road is now under construction for widening to four lanes. Also there is a Special Economic Zone planned nearby this water body. These might be upcoming threats to the water body which then might fail to attract migratory species in later years.

Hence this observation of congregations and migratory movements would be significant contribution on the background of recent outbreaks of Avian Influenza, and conservation strategies of this winter migratory ground.

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