

2016

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### Recommended Citation

Abbas, F. -, Manzoor, M., Shah, I., & Mian, A. (2016). Black-Legged Kittiwake (*Rissa tridactyla*) in Karakoram: Record on Vagrancy, *Journal of Bioresource Management*, 3 (4).

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## **BLACK-LEGGED KITTIWAKE (*RISSA TRIDACTYLA*) IN KARAKORAM: RECORD ON VAGRANCY**

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### **ABSTRACT**

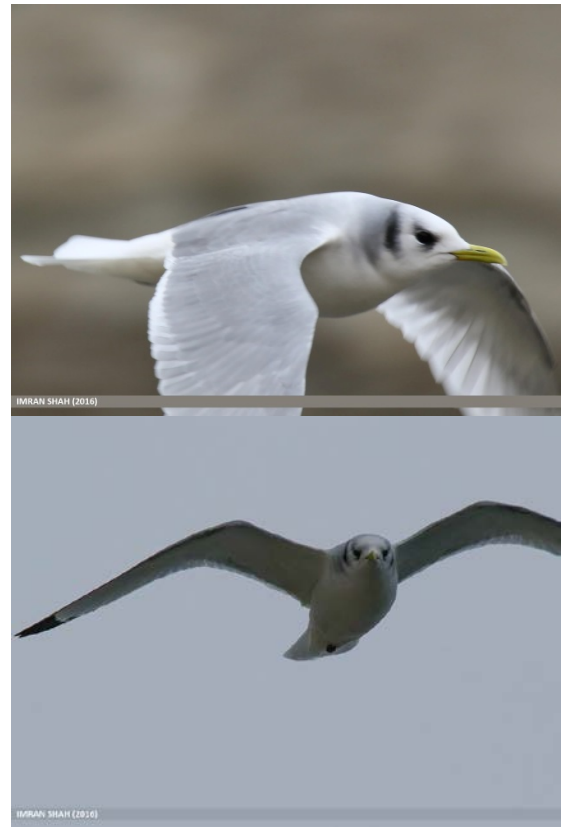
A Black-legged Kittiwake (*Rissa tridactyla*; BLK) circumpolar shore bird was recorded on the Borith Lake (36°25'54.31"N, 74°51'44.09"E) 4,000-5,000 km away from the gull family bird's eastern or western normal habitat and 2000 km from its last report few years ago and 1500 km from nearest seashore. This report discusses the possible reasons and so far reported vagrancy of this bird.

**Keywords:** *Rissa tridactyla*, Borith Lake, Ecological Shift, Climatic Changes.

### **REPORT**

A Black-legged Kittiwake (*Rissa tridactyla*; BLK) was recorded on the Borith Lake (36°25'54.31"N, 74°51'44.09"E) for few days in December, 2016 (Figure 1). Interviews with birdwatchers and wildlife enthusiasts of the area reported sighting of BLK at the lake in 2015. Borith Lake is a saline lake, located at 2,600 m above sea level (asl) in the Karakoram range, lying amid high mountains and close to Ghulkin and Passu glaciers. The lake is situated at some 1,500 km from the nearest seashore (the Arabian Sea in the south) and is around 2,000 km from Maharashtra (India), where a vagrant BLK sighting was reported in 2013 (Das *et al.*, 2013). The lake is about 4,000-5,000 km away from the gull family bird's eastern or western normal habitat or reported population in circumpolar region.

Vagrancy distances for BLK have been stated to be a few hundred km (Rusk *et al.*, 2013), however different reports indicated land penetration of this species in North America up to 1,600-2,600 km (Connelly and Gates, 1981; Weber and Lavirison, 1977; Haywood, 1976; Verner, 1974; McCreary, 1937). Connelly (1981) suggested the extension in the bird's home



**Figure 1: Black-legged Kittiwake photographed at Borith Lake, Pakistan in December 2016.**

range during that 1970's and associated this with the formation of new water bodies in USA. Similarly, reports from Asia (citing unpublished records) suggest the BLK

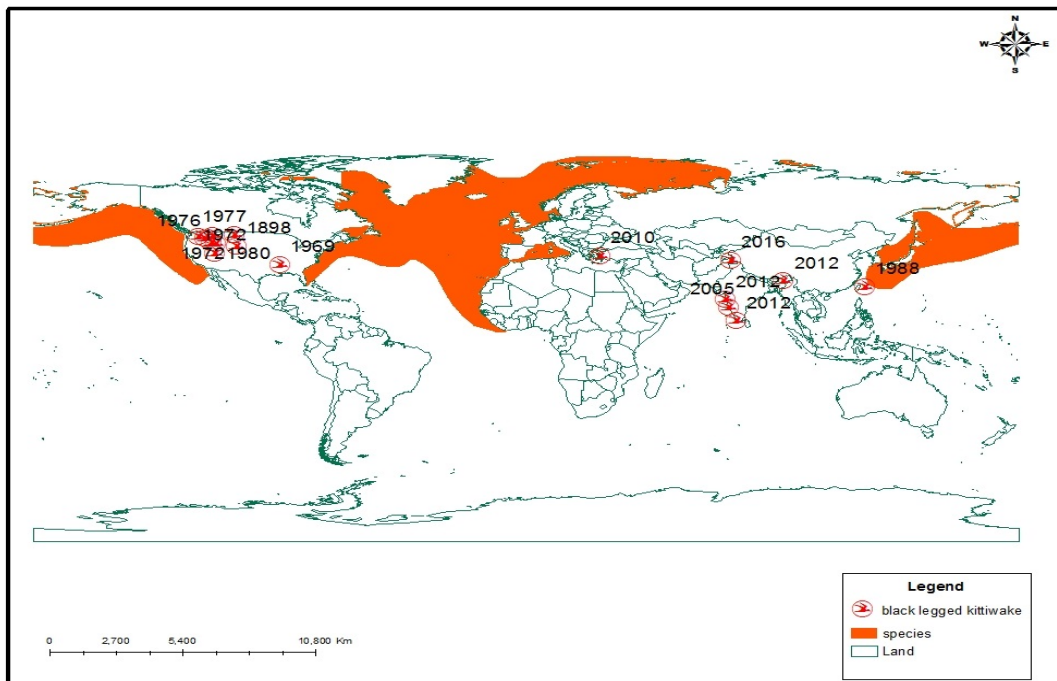
*J. Bioresource Manage. (2016) 3(4): 21- 23.*

sighting 3,000 - 5,000 km away from its natural habitat (Das et al., 2013). McKnight et al. (2011) divides BLK into three categories, i.e. resident, coastal and pelagic birds, and the pelagics were tracked to travel up to 1,700 km inland. Lorraine et al. (2012) indicated longer foraging trips of BLK in search of better food availability, extending up to a few thousand kilometers.

Present BLK sighting in the Karakoram Range in the northern highlands of Pakistan, 4,000-5,000 km away from its normal/ natural habitat in North America and Europe, seems to be the outcome of abnormally high monsoon rains in the subcontinent in 2014. During the annual summer monsoon season a series of low pressure belts move from Indian Ocean upward into deep inland moving along the southern slopes of the Himalayas causing widespread rains. The northern slopes of the

Himalayas and the highland of north-western Pakistan, including the Karakoram-Hindukush ranges, remain out of the reach of such low pressure belts. As rains do not extend to these highlands, it seems BLK avoiding the rains were pushed into this area and rested at high dry mountains at the limit of the range of the summer monsoon.

Though BLK has a circumpolar distribution, yet different studies (Pettingill, 1970; Duncan, 1978; Figure 2) suggest the gull's juvenile wander significant distances in late summers and fall. However, the distance covered in this case is higher than mentioned by them. Orben (2015) reported that Red-legged Kittiwake (RLK) and BLK were sympatric during 1970s but later on RLK population declined while BLK survived, because of its adaptations or migratory ability.



**Figure 2: General distribution range and location of vagrancy reported for Black-legged Kittiwake during different years. (2016 Borith Lake, Pakistan).**

*J. Bioresource Manage.* (2016) 3(4): 21- 23.

Since, BLK habitat is closely associated with sea and ice, which are first in the line of vulnerability to any climatic shift, it would be easy to judge climatic and ecological changes by studying such abnormal movements.

As in the natural ecosystems BLK has a major role, feeding on invertebrates and fish, there also slight chances of increased predators of BLK, which pushed it out and brought it at Borith Lake. Birdwatchers of 2016 at the Borith Lake reported sighting of 128 bird species, of which only three are known predators of BLK.

Wanless *et al.* (2007) suggested that industrial fishing in BLK habitat not only brought down the quantity of its major prey, i.e., Sand Lance (*Ammodytes marinus*), but also altered nutrient availability, like lowered lipid values, in remaining Sand Lances, thereby resulting in displacement of whole colonies BLK.

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