



भारतीय वन्यजीव संस्थान
Wildlife Institute of India

ऑनलाइन उत्तर

No. WII/RTI/CPIO/2018-19(Qtr-I)/22

दिनांक 15 जून 2018

सेवा में,

श्री सच्चिदानंद सहाय,
शिव मंदिर, नालाचा, दक्षिण शिवपुरी,
हजारीबाग, झारखण्ड - 825 301

विषय - सूचना का अधिकार अधिनियम, 2005 के अंतर्गत सूचना प्रदान किये जाने के सम्बन्ध में -

सन्दर्भ - आपके द्वारा सूचना का अधिकार अधिनियम के तहत आवेदन पत्र दिनांक 05.06.2018 जो कि

पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, नई दिल्ली से दिनांक 05.06.2018 को प्राप्त हुआ।

महोदय,

कृपया उपरोक्त विषय एवं सन्दर्भ का अवलोकन करने की कृपा करें। आपके द्वारा चाही गई सूचना सम्बंधित अधिकारी से प्राप्त कर ली गई है जो कि इस प्रकार है -

प्रश्न	उत्तर
भारत के विभिन्न राज्यों में शोर-शराबे से पशु-पक्षियों की भाषा, व्यवहार एवं प्रजनन में क्या-क्या परिवर्तन आ रहे हैं ?	इस विषय पर भारतीय वन्यजीव संस्थान द्वारा अभी तक कोई भी विस्तृत अध्ययन नहीं किया गया है। हालांकि एक संक्षिप्त शोध केदारनाथ वन्यजीव क्षेत्र में किया गया था जिसमें पशु-पक्षियों पर हेलीकाप्टर द्वारा उत्पादित ध्वनि के प्रभाव का अध्ययन किया गया था जिसकी एगजीक्यूटिव समरी इस पत्र के साथ दो प्रश्नों में संलग्न है।

अगर आप उक्त जानकारी से संतुष्ट नहीं हैं तो सूचना का अधिकार अधिनियम 2005 के तहत निम्नलिखित अपीलीय प्राधिकारी से अपील कर सकते हैं -

"डा० वि० बि० माथुर, निदेशक एवं अपीलीय प्राधिकारी, भारतीय वन्यजीव संस्थान, चन्द्रबनी, देहरादून - 248001, दूरभाष न० 0135-2646102, 2640910"

धन्यवाद,

स्पीड पोस्ट
SPEED POST

संलग्न - एगजीक्यूटिव समरी
18/6/18

भवदीय
अंजू बरोठ
केंद्रीय लोक सूचना अधिकारी

o/c

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Executive Summary

The Kedarnath shrine is an important and famous Hindu religious site situated at 3583 m near the source of the Mandakini River in Uttarakhand. For centuries, large numbers of pilgrims visit the shrine in the summer months. The stretch between Gaurikund and Rambara of the pilgrim route passes through the Kedarnath Musk Deer Sanctuary (WS). Helicopter services were initiated during 2007-08 to ferry pilgrims. In June 2013, devastating flash floods swept through the region, and almost half of the old pilgrim route was damaged, and a new slightly longer route was constructed. After 2013, the number of helicopters operating daily flights to Kedarnath shrine increased dramatically. Some of the local residents raised concerns over the potential impact on wildlife of Kedarnath WS due to high intensity sound produced by the helicopters. Based on the request from Uttarakhand State Forest Department, the Wildlife Institute of India carried out a study to assess the impacts of helicopter flights on wildlife of Kedarnath WS and to suggest mitigation measures.

The Mandakini valley was selected as the main study site, where the helicopter flights operate. The adjacent Kaliganga valley, and Shokharakh area were taken as control sites. The sampling was carried out in Mandakini valley in two different study periods – September to December 2015 and April to June 2016; coinciding with the helicopter flying period. Helicopter aviation data and noise levels in different elevation and habitat types were recorded in the Mandakini Valley to detect wildlife species presence. Trails ($n=7$) and vantage points ($n=2$) were sampled, and camera traps ($n=23$) were deployed. Comparative studies on wildlife species presence in Kaliganga Valley and Shokharakh (control sites) were carried out using trail sampling and camera trapping. Fresh faecal samples of wild mammals were collected from Mandakini Valley and the two control sites to analyse the levels of stress hormone using Enzyme Immuno-Assay procedure at the CCMB-LaCONES, Hyderabad. A detailed literature review was carried out on impacts of aircraft flights on wildlife carried out in different parts of the world to understand likely impacts on wildlife and various mitigation measures proposed.

The results showed that May is the month when maximum number of flights operated (305/day) in Mandakini Valley followed by June and October, as Sersi helipad is nearest to Kedarnath, the onward journey to Kedarnath from Sersi reached the lowest mean flight height (152.4 ± 6.11 m). Noise levels recorded from six recording sites in Mandakini valley had a mean well above the 50 dB upper noise limit for silence zones. Negative correlation ($R^2 = 0.33$ and 0.25) was observed between flight height and noise level for open coniferous and broadleaved forest. Presence of 20 mammal species (carnivore-8, ungulate-7, primate-2, rodent- 2, lagomorph-1) and five galliformes species (pheasants-3, partridge-2) has been confirmed from the study area.

In general, the study area is already exposed to immense anthropogenic pressure (pilgrims, constructions, etc.) it is very difficult to decouple the effects of helicopter flying and other anthropogenic disturbances. Based on the findings of this study and a perusal of published information on impacts of aircraft flights on wildlife, the following conclusions are arrived at:

1. All the common wildlife species of Kedarnath WS are present in Mandakini valley. The comparison among the photo-capture rates of different wild animals

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depicts the consistent use of available habitat in the Mandakini valley despite a high level of helicopter operations.

2. Some wildlife species altered their activity pattern to either crepuscular or nocturnal due to the cumulative effects of anthropogenic pressures in this area mostly in the form of pilgrimage and associated human activities. However, in the case of Himalayan monal pheasant, there was a marginal overlap in peak activity period with that of peak helicopter operations.
3. Results of stress hormone studies are in-conclusive due to low sample sizes. However, the results can be used as baseline for future comparative studies on similar investigations pertaining to helicopter flight impacts on wildlife.
4. Taking the above three observations into consideration, it appears that most of the mammals have adapted to the anthropogenic disturbances in Mandakini valley. However, repeated observations in the future would be needed to draw robust conclusions.
5. There is a high negative correlation between flying height and noise levels and the current levels of noise due to anthropogenic activities and helicopter flights. Thus, prescribing a minimal flight height would be useful to reduce the noise levels.
6. Helicopter sorties ranged from 2 to >300 flights per day in Mandakini Valley. Since most of the mammals appear to have adapted to this level of noise, it should not be allowed to go beyond the current levels of helicopter flights. Therefore, efforts has to be made to ensure that the upper limit for number of flights per day does not exceed 300 flights/day.

The study recommends the following measures:

1. Restricting helicopter flight heights to at least 600 m (2000') with the exception of take-off and landing times. This would help in reducing noise levels in the area.
2. Monitoring the helicopter operations with regard to adherence to the prescribed heights will be required. This could be done using laser distometers or lidar guns or set up an Automatic Dependent Surveillance-Broadcast (ADS-B) within the Kedarnath Wildlife Sanctuary. Monitoring of impacts of helicopter flights on wildlife could be carried out on a regular basis (every 3 to 5 years) including stress hormone studies so that a comprehensive database can be developed for rigorous statistical analysis
3. As a long-term measure, passenger ropeway for transportation of pilgrims as an environment friendly alternative could be planned and constructed as this will reduce pilgrim foot falls in the trekking path to the shrine and helicopter services. The passenger ropeway will not require building a motorable road through the Kedarnath WS as all the material and machines required for building ropeway could be transported by air using specialized helicopters.

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