

Biodiversity survey in Gamgul Siyabehi Wildlife Sanctuary

Introduction

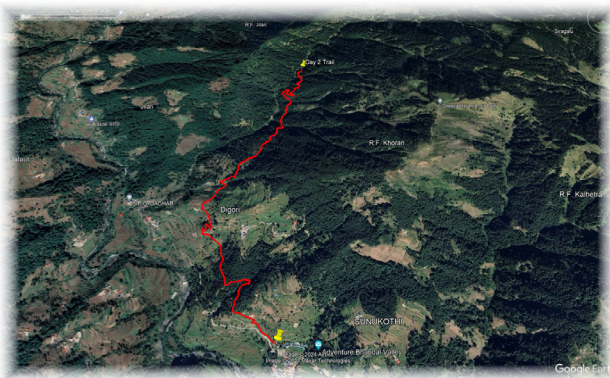
Our team was invited by the wildlife division of the Himachal Pradesh Forest Department to participate in a three-day biodiversity survey conducted on 24–28 May, in and around the Gamgul Siyabehi Wildlife Sanctuary. Located in the Bhandal valley in Salooni tehsil of the Churah division, it is one of the most picturesque sanctuaries in the Chamba District. The survey focused on recording the study area's biodiversity with special emphasis on birds and mammals. Covering an area of nearly 108.85 km², the vegetation consists of mixed broad leaved and coniferous forests composed primarily of *Cedrus deodara*, *Betula utilis*, *Abies pindrow*, *Picea smithiana*, Brown Oak, *Rhododendron campanulatum*, shrubs and alpine pastures. Although the survey was initially planned for five days, due to a change in weather conditions and difficult trails due to snow, it could be conducted only for three days.

Methodology

The methodology utilised in the study was to follow forest trail paths at an even pace and record any wildlife found along the way. To ensure proper documentation of the recorded species, we used the Geotracker App to record the trails and the Polaris App to record the GPS. The species name, number, and time for each sighting were recorded using our smartphones. The surveys were conducted in the early morning and evening hours when wildlife activity is typically higher.

Our team was divided into two groups to cover more area. Group A, consisting of Amrin and Kritika surveyed the trails near the forest rest house, in Bhandal accompanied by a local guide. Group B, consisting of Vishal, Vinod (Forest guard), Subhash, and Vipin (Forest mates) trekked 6 km from Langera to reach the sanctuary area one day prior to the survey. The team endured a climb of a steep 85-degree ascent to reach

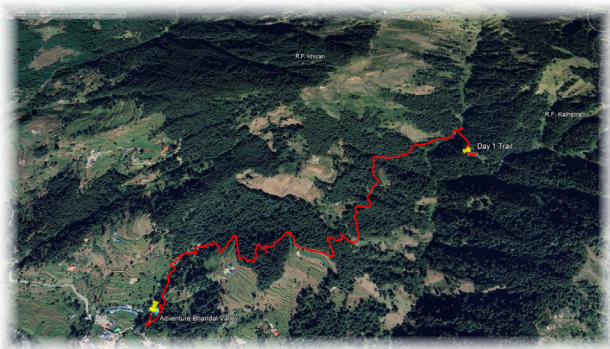




Day 1 Trail.



Day 2 Trail.



Day 3 Trail.

© P. Kritika.

their base camp in Kiyada Dhaar. On the way, the team encountered several Black Bear scats and recorded the GPS locations for each finding to support as ad libitum data in the survey. However, the turn of weather brought rain and winds which made it difficult for the team to navigate in the darkness.

Day 1, 25 May 2024

Group A: Went on a 5 km trek along the forest trail with a local guide. Data was recorded from

06:39 am to 09:12 am. The steep and rocky trail was challenging due to the accumulation of leaf litter and the rain from the previous day which created a slippery surface. There were no mammals spotted during the entire trail but birds like Coal tits, Black Bulbuls, Great Barbets, and Streaked Laughing Thrush were recorded. Further along the trail, the dense canopy of the pine trees made it difficult to sight the birds. The team also encountered migrating shepherds grazing their livestock along the trails.

Group B: Started the survey after sunrise struck a warm glow over the landscape. The landscape was dominated by Himalayan oak *Quercus semicarpifolia* and Himalayan Birch *Betula utilis* trees. The abyss was filled with calls of Himalayan Monal and Koklass pheasants. Each call was recorded along with GPS readings to keep track of indirect signs. The team was flabbergasted to witness a Monal in flight which was the most striking finding of the day. The team went on another trek in the evening and noted that the forest was quieter in comparison to the morning hours with a few calls of Monals. There was not much wildlife recorded except a few flowering plants like *Anemonastrum obtusilobum*, *Thermopsis barbata*, etc.

Day 2, 26 May 2024

Group A: Following the same protocols, the team started the survey at 06:23 am and followed a different route guided by the local guide which started along farmland to reach the forest patch. Due to the lack of thick canopy trees, it was easier to spot birds near the farmlands than inside the forest. Hence, more birds were recorded near the farmlands than inside the forest. The team encountered some patches where there was no way ahead and they had to walk in the middle of the forest with a rough trail but since the local guide was present, there was nothing to worry about.



Group B scanning the landscape. © Vipin.



Understanding flora. © Vinod.



Documenting Black bear pug marks. © Vinod.

There were no mammals recorded in the trail and the bird calls were very faint, almost nil in the forest section. After walking for 4.6 km the team encountered a damaged trail and had to end the survey at 08:29 am. Species spotted included Himalayan Bulbuls, Coal tits, Ravens, Slaty-headed Parakeets, etc.

Group B: The team climbed up to an altitude of 3500 m from where it was possible to scan a larger area of the sanctuary. At the top of the mountain, multiple scats of Brown Bears were recorded. On the way back the team encountered a Red Fox and came across more Black Bear scats.

During the evening trek, a few calls of Monal and Koklass pheasants were recorded.

Day 3, 27 May 2024

Group A: On the final day, the team started at 06:27 am and the route was completely different than the previous two. Half of the trail was along the roadside and half of it was inside the forest. After trekking for about 5 km, the survey ended at 09:23 am.

The trail along the forest patch was a bit challenging in comparison to the last two days as parts of the trails were damaged at a few patches and the team had to cross a stream with running water. In comparison to the last two days, more birds were spotted along the roadsides and farmlands than in the forest patch. A Rhesus Macaque was observed on the pine trees on the roadside.

Group B: Due to the lack of ration and the scarcity of drinking water due to the drying up of the water source due to extreme heat, the team decided to move back to Bhandel. The journey started on the morning of 27 after loading their luggage on mules. On the way back, the team encountered fresh Black



Black bear scat.



Brown Bear scat.

© Vishal Ahuja.

Bear scats at different sites and indirect signs like broken branches, bent grasses, etc that indicated that the bear had climbed down following the same trail. The team spotted a Red Fox meticulously searching for Himalayan Pikas in the mud holes.

Along the path, the team came across *Spiraea canescens* shrubs which had grown very tall due to not being cut by the locals. One might easily misidentify the shrub as a tree due to its morphological resemblance to a tree.

A local team member explained that Black Bears and Chamba Sacred Langurs are fond of eating its seeds and the animals often climb on top of the shrub's canopy while foraging. The shrub also is beneficial to the local shepherds as they provide food and shade for their livestock hence, they avoid cutting its branches.

Results

Flora

The time of the survey coincided with the blooming season of the high-altitude pastures enabling the documentation of a diverse variety of floral species.

Fauna

The biodiversity survey in Gamgul Siyabehi Wildlife Sanctuary documented a diverse group of bird species. Mammal sightings were less frequent, but present including the direct observation of a Red Fox and indirect evidence of Black Bears and Brown Bears through scat findings. A summary of all the bird species recorded during the entire survey is given below.

Table 1. Summarises a list of the flora species recorded during the survey.

	Common Name	Scientific Name
1	Bell Rhododendron	<i>Rhododendron campanulatum</i>
2	Black Pea	<i>Thermopsis barbata</i>
3	Blue Himalayan Anemone	<i>Anemonastrum obtusilobum</i>
4	Dark Blue Gentian	<i>Gentiana carinata</i>
5	Dense-Raceme Corydalis	<i>Corydalis govaniana</i>
6	Drumstick Primrose	<i>Primula denticulata</i>
7	Grey Stem Spiraea	<i>Spiraea canescens</i>
8	Himalayan Bergenia	<i>Bergenia stracheyi</i>
9	Himalayan May Apple	<i>Podophyllum hexandrum</i>
10	Himalayan Meadow Primrose	<i>Primula rosea</i>
11	Himalayan Spiraea	<i>Spiraea canescens</i>
12	Himalayan Thimbleweed	<i>Anemonastrum obtusilobum</i>
13	Himalayan Trillium	<i>Trillium govanianum</i>
14	Marsh Marigold	<i>Caltha palustris</i>
15	Spurge	<i>Euphorbia sp.</i>

Flora species recorded during the survey.



Anemonastrum obtusilobum.



Bergenia stracheyi.



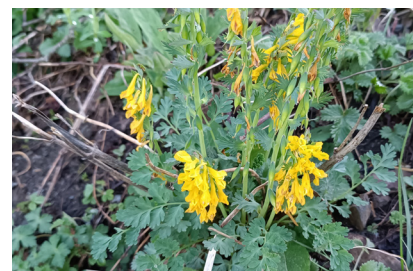
Caltha palustris.



Euphorbia sps.



Gentiana carinata.



Corydalis govaniiana.



Podophyllum hexandrum.



Primula denticulata.



Woody branches of *Spiraea canescens.*



Rhododendron campanulatum.



Spiraea canescens.



Primula rosea.



Thermopsis barbata.



Trillium govaniianum.

Fauna species recorded during the survey.



Common Raven.



Russet Sparrow.



Tickell's Leaf Warbler.



Grey Bushchat.



Streaked Laughing Thrush.



Great Barbet.



Blue Whistling Thrush.



Grey-hooded Warbler.



Rock Bunting.

© Amrin Ansari.

Scenic landscape of the survey area.



Table 2. Summarises a list of the bird species recorded during the survey.

	Common name	Scientific name
1	Ashy Drongo	<i>Dicrurus leucophaeus</i>
2	Barn Swallow	<i>Hirundo rustica</i>
3	Black Bulbul	<i>Hypsipetes leucocephalus</i>
4	Black-throated Tit	<i>Aegithalos concinnus</i>
5	Blue Whistling Thrush	<i>Myophonus caeruleus</i>
6	CoalTit	<i>Periparus ater</i>
7	Common Myna	<i>Acridotheres tristis</i>
8	Common Raven	<i>Corvus corax</i>
9	Common Stonechat	<i>Saxicola torquatus</i>
10	Eurasian Collared Dove	<i>Sterptopeli adcaocto</i>
11	Great Barbet	<i>Megalaima virens</i>
12	Green-backed Tit	<i>Parus monticolus</i>
13	Grey Bushchat	<i>Saxicola ferreus</i>
14	Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>
15	Himalayan Bulbul	<i>Pycnonotus leucogenys</i>
16	Himalayan Monal	<i>Lophophorus impejanus</i>
17	House Sparrow	<i>Passer domesticus</i>
18	Long-tailed Minivet	<i>Pericrocotus ethologus</i>
19	Red-rumped Swallow	<i>Cecropis daurica</i>
20	Rock Bunting	<i>Emberiza cia</i>
21	Rufous Sibia	<i>Heterophasia capistrata</i>
22	Russet Sparrow	<i>Passer rutilans</i>
23	Scaly-bellied Woodpecker	<i>Picus squamatus</i>
24	Siberian Stonechat	<i>Saxicola maurus</i>
25	Slaty-headed Parakee	<i>Psittacula himalayana</i>
26	Spotted Dove	<i>Spilopelia chinensis</i>
27	Square-tailed Drongo Cuckoo	<i>Surniculus lugubris</i>
28	Streaked Laughing Thrush	<i>Trochalopteron lineatum</i>
29	Tickell's leaf warbler	<i>Phylloscopus affinis</i>

Acknowledgement

Grateful acknowledgements are made to Mr. K.S. Jamwal, DFO Wildlife Division, and Chamba Forest Department for inviting us to conduct this survey and hosting us throughout our stay. We would also like to thank our fellow forest guards and local guides who accompanied us in our study and provided insightful information about the local fauna. They helped us navigate through the challenging trails and ensured our safety. Our team is very grateful to receive this opportunity to contribute to the efforts towards understanding Chamba's biodiversity as part of our ongoing efforts to conserve the Chamba Sacred Langur under the Himalaya Langur Project, and to rewild the degraded landscape & rebuild livelihoods under the Himalayan Restoration Project.

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