



COMPLIANCE REPORT

OWP (PIL) No.14/2012

Date of Order : 22.08.2017

HIGH COURT OF JAMMU & KASHMIR

AT SRINAGAR

Gulmarg Wildlife Sanctuary:

A Biodiversity Hotspot



Gulmarg Wildlife Sanctuary:

A Meadow of Flowers



Gulmarg Wildlife Sanctuary:

A Meadow of Flowers



Gulmarg Wildlife Sanctuary: A Preferred Tourist Destination



INTRODUCTION

- Gulmarg Wildlife Sanctuary is situated 26 Kms to the South-West of District Baramulla.
- Notified in 1987
- Falls in Pirpanjal Range and is under the North-West Biogeographic Zone 2A
- Encompasses an area of 180 sq kms,
- Boundaries marked by Jhelum Valley Forest towards North, Forest Division of Poonch towards south,



INTRODUCTION

- Alpine and subalpine pastures dominate the higher altitudes dotted with high altitude lakes
- Temperate habitats are dominated by coniferous forests comprised of Pine, Deodar, Spruce and Fir
- Birch marks the tree line and other deciduous trees such as horse chestnut represent the riverine vegetation
- Rhododendron and Juniper, the soil binders, form the subalpine scrub vegetation

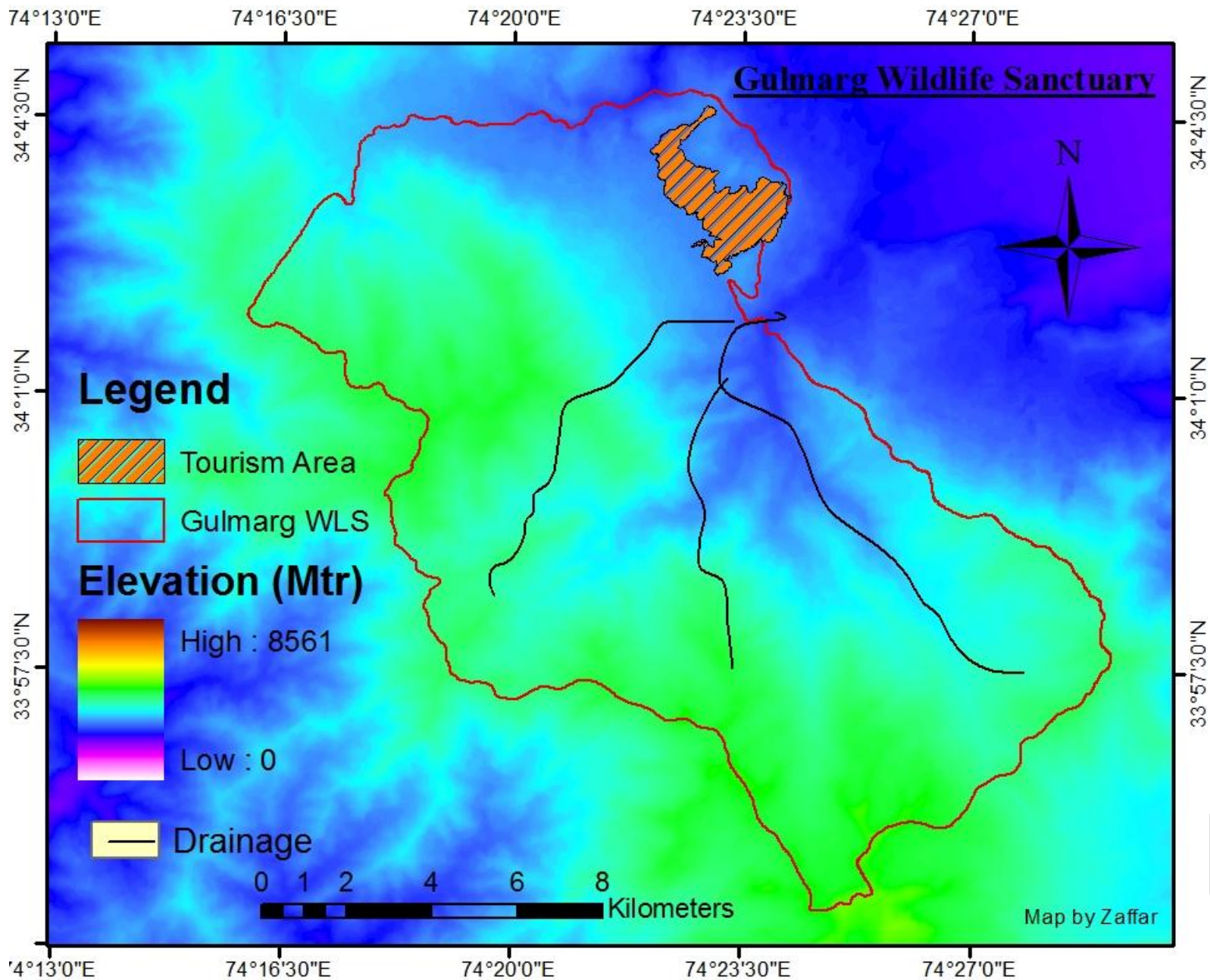


ROLE IN ECOLOGY AND ECONOMICS

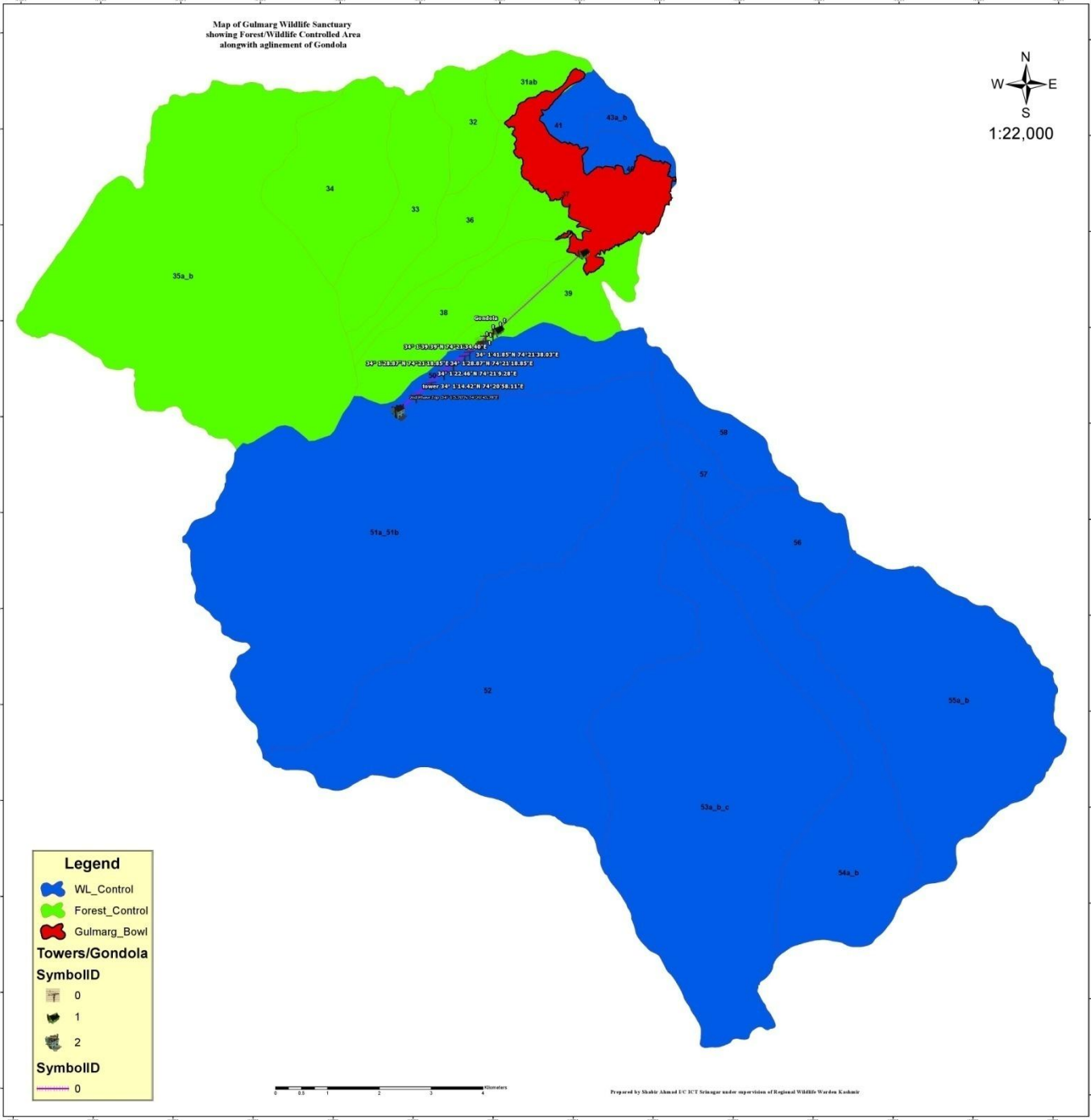
- The alpine and Sub-alpine habitats/vegetation work as water towers and feed the famous Forozepur nalla and Baha nallah
- Thus providing water for the purpose of drinking and irrigation for large population of Baramulla and Budgam districts
- The alpine meadows also play a crucial role in keeping the glaciers intact and help in flood control
- These pasturelands provide high quality forage for herbivores
- The subalpine scrubs such as Rhododendron and Juniper work as soil binders to stop soil erosion and flash floods



Digital Elevation Model of Gulmarg Wildlife Sanctuary



Map of Gulmarg Wildlife Sanctuary
 showing Forest/Wildlife Controlled Area
 alongwith aglnement of Gondola



Legend

- WL_Control
- Forest_Control
- Gulmarg_Bowl

Towers/Gondola

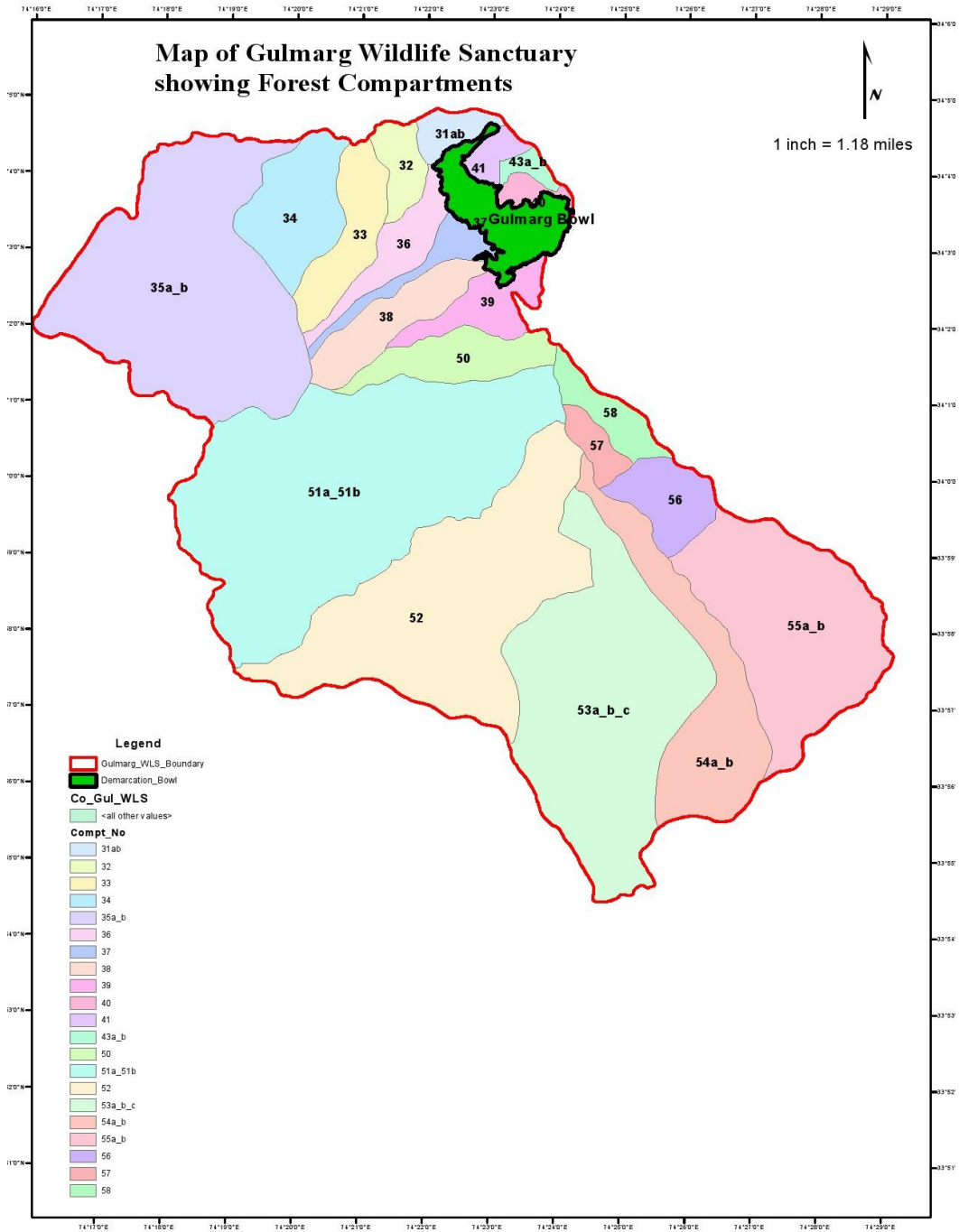
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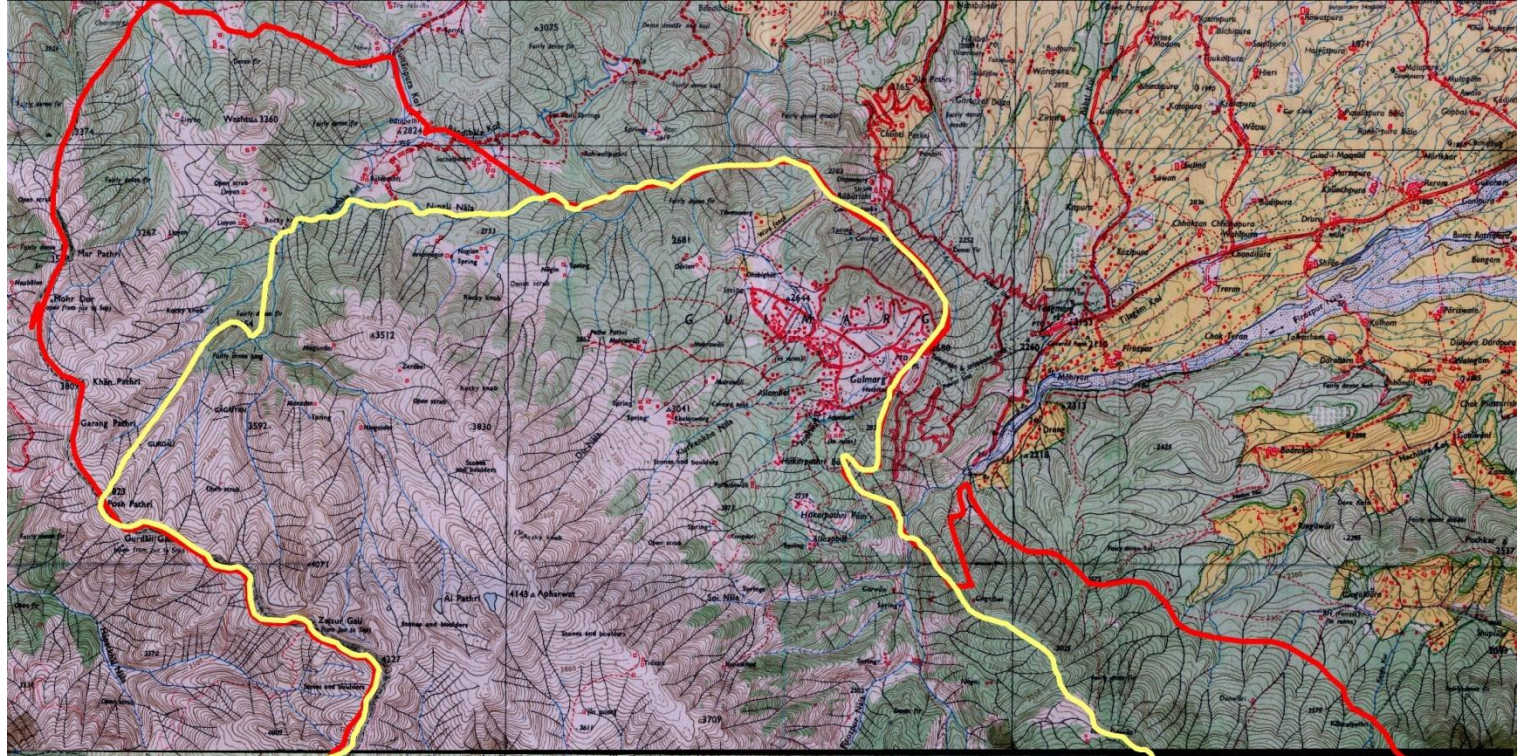
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◎ Mammals

FAUNAL DIVERSITY

S.no	Species	Scientific Name	Status in Wildlife Act	IUCN* Status
1	Himalayan Brown Bear	<i>Ursus arctos</i>	I	LC
2	Asiatic Black Bear	<i>Ursus thibetanus</i>	II	Vulnerable
3	Leopard	<i>Panthera pardus</i>	I	Vulnerable
4	Musk deer	<i>Moschus crysgaster</i>	I	Endangered
5	Kashmir Grey Langur	<i>Semnopithecus ajax</i>	II	Endangered
6	Snow Leopard	<i>Uncia uncia</i>	I	Vulnerable
7	Tibetan Wolf	<i>Canis lupus</i>	I	LC
8	Red fox	<i>Vulpes vulpes</i>	II	LC
9	Leopard Cat	<i>Prionailurus bengalensis</i>	I	LC
10	Jungle Cat	<i>Felis chaus</i>	II	LC
11	Yellow Throated Martin	<i>Martes flavigula</i>	II	LC

ENCOUNTER RATE OF SPECIES BASED ON DIRECT SIGHTINGS AND INDIRECT EVIDENCES

S.no	Species	Encounter rate/Km walk
1	Himalayan Brown Bear	2.3
2	Asiatic Black Bear	3.1
3	Leopard	1.5
4	Musk deer	0.5
5	Kashmir Grey Langur	2.1
6	Tibetan Wolf	0.8
7	Red fox	1.2



74°13'0"E

74°16'30"E

74°20'0"E

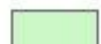

74°23'30"E

74°27'0"E

34°4'30"N

34°4'30"N

Legend

-  Tourism Area
-  Gulmarg WLS

Gulmarg Wildlife Sanctuary



34°1'0"N

34°1'0"N

BB - Asiatic Black Bear



Brown Bear



Snow Leopard



Kashmir Musk Deer



Kashmir Grey Langur



Leopard

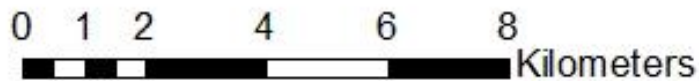


Himalayan Monal



33°57'30"N

33°57'30"N



74°13'0"E

74°16'30"E

74°20'0"E

74°23'30"E

74°27'0"E

Map by Zaffar

KASHMIR MUSKDEER

- Musk deer occupies forested and alpine scrub habitats.
- IUCN Status: Endangered
- Population trend: ↓ Decreasing
- Elevation range: 2000-4000 Mtr above Sea level
- Gulmarg WLS is an important habitat for Musk deer owing to its vegetation and geographic location.



KASHMIR GREY LANGUR



- **Recently got upgraded as separate species**
- **Distribution restricted to some parts of Pakistan and the states of Himachal Pradesh and Jammu and Kashmir only**
- **IUCN Status: Endangered**
- **Population trend: ↓ Decreasing**
- **Recent study modeled the distribution of this endangered species in whole Kashmir valley and results indicated Gulmarg WLS very important for this primate (Shah et al. 2017)**

SNOW LEOPARD

- **Himalayan Mountains form an important part of distribution range of Snow leopard.**
- **In Kashmir valley distribution is restricted to certain areas and Gulmarg is one of these important areas**
- **IUCN Status: Vulnerable**
- **Population trend: ↓ Decreasing**



BIRD DIVERSITY

- 94 bird species belonging to different families have been reported from Gulmarg WLS



Kashmir Flycatcher



Himalayan Bluetail



IMPORTANT BIRD SPECIES

S. NO.	English Name	Scientific Name.
1.	Golden Eagle	<i>Aquila chrysaetos</i>
2.	Himalayan Griffon	<i>Gypsy himalayensis</i>
3.	Beared Vulture or Lammergeier	<i>Gypaetus barbatus</i>
4.	Hobby	<i>Falco subbuteo</i>
5.	Himalayan snow cock	<i>Tetraogallus himalayenis</i>
6.	Monal Pheasant	<i>Lophophorus impejanus</i>
7.	Koklas Pheasant	<i>Catreus wallichii</i>
8.	Snow Pigeon	<i>Columba leuconota</i>
9.	Slatyheaded Prakeet	<i>Psittacula himalayana</i>
10.	Eurasian Cuckoo	<i>Cuculus canorus</i>
11.	European Bee-Eater	<i>Meropsapi aster</i>
12.	Spotted Nutcracker	<i>Nucifraga Caryocatactes</i>
13.	Redbilled Cough	<i>Pyrrhocorax pyrrhocorax</i>
14.	Long tailed Minivet	<i>Pericrocotus ethologus</i>
15.	Variegated Laughing Thursh	<i>Garrulax variegatus</i>
18.	Kashmir Flycatcher	<i>Muscicapa Superciliari</i>
19.	Little Pied Flaycatcher	<i>Muscicapa leucomelanura</i>
20.	White browed Blue Flycatcher	<i>Muscicapa superciliaris</i>
22.	Kashmir Nuthatch	<i>Sitta europea cashmirensis</i>
23.	Himalayan Tree Creeprer	<i>Certhia himalayan</i>
25.	Himalayan Greenfinch	<i>Cardaelis spinoides</i>
26.	Orange Bullfinch	<i>Carpodacus erythrinus</i>



Eurasian Eagle Owl



Bearded Vulture



Oriental Turtle Dove



Common Rosefinch



Grey wagtail



European Goldfinch

BUTTERFLY DIVERSITY

- 31 Butterfly Species are reported from Gulmarg WLS (Qureshi et al. 2013)
- High tourist flow was reported as major threat for butterflies.

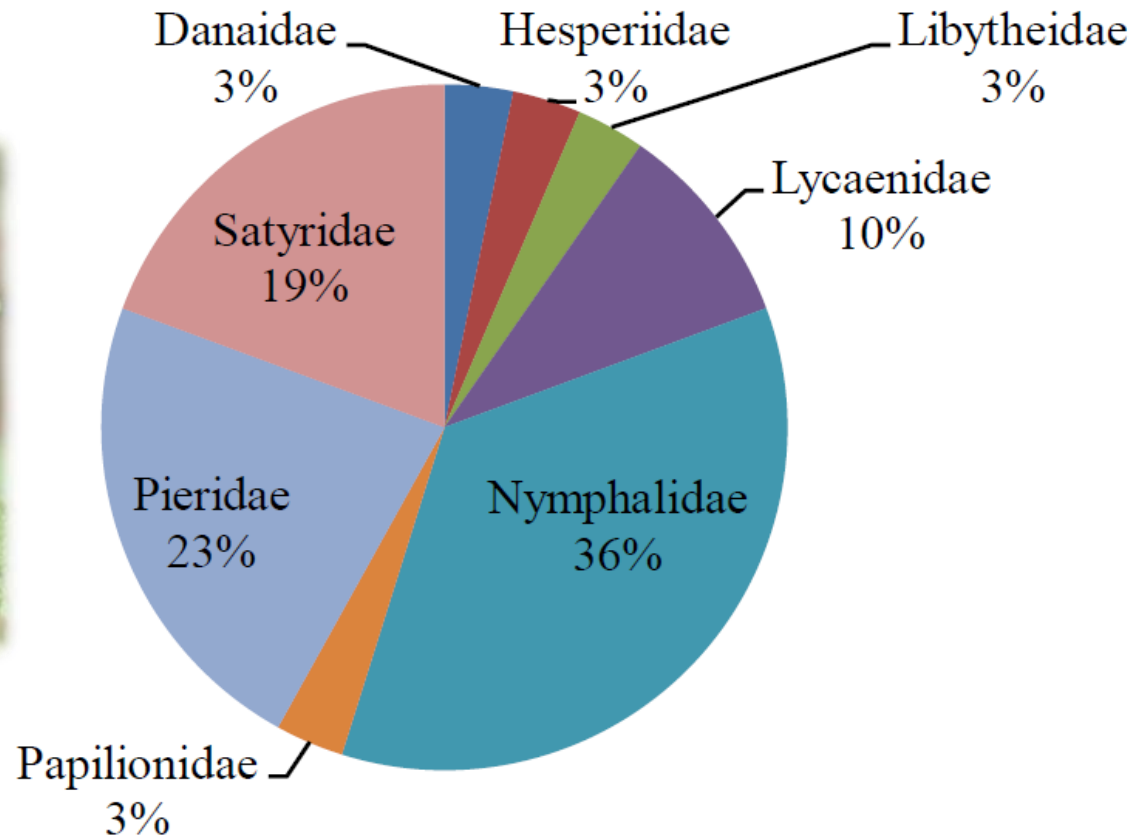


Fig: Family wise abundance of Butterflies in Gulmarg

IMPORTANT PLANT SPECIES OF GULMARG WLS

S. no.	Local name/English name	Scientific name
1	Liddur posh	<i>Ranunculus palmitifidus</i>
2	Wane wangun	<i>Podophyllum sp.</i>
3	Nilthoth	<i>Meconopsis aculeata</i>
4	Mohund like	<i>Delphinium vestitum</i>
5	Kashmiri Larkspur	<i>Delphinium cashmerianum</i>
6	Sangud dade	<i>Dryopteris</i>
7	Gondum gond	<i>Equisitum arvensis</i>
8	Thridi gel	<i>Clematis nontans</i>
9	Sombal	<i>Berberis zebbaliana</i>
10	Sangud chai like	<i>Anemone obtuolloba</i>
11	Lat raze	<i>Aquilegia fragrancs</i>
12	Chewed	<i>Actaea spicata</i>
13	Patrees	<i>Aconitum heterophyllum</i>

Delphinium cashmerianum



Podophyllum sp.



GULAMRG WLS: TREASURE OF MEDICINAL PLANTS

- Important species like *Sasurrea costus* (Jogi Badshah) are found here
- Other important medicinal plants include:
 - *Achilleia millefolium*
 - *Discorea deltoidea*
 - *Hypericum perforatum*
 - *Menthe longifolia*
 - *Taraxacum officinale*
 - *Rheum austral*
 - *Fragaria nubicola*(Tak et al. 2013)



Sasurrea costus



- *Atropa acuminata*

TREASURE OF MEDICINAL PLANTS



Picrorhiza Kurroa



Jurinea dolomia



TREASURE OF MEDICINAL PLANTS



Picrorhiza Kurroa



Trillium govianianum



GULMARG WLS AS A CORRIDOR

- The WLS is connected with Poonch in south and Uri in west
- Many wild animals such as markhor and brown bear are reported to use it as corridor to move from Poonch to the forests of Kashmir valley and back



AESTHETICS IMPORTANCE

- The landscape and other natural beauty of the WLS and adjacent areas attracts is one of best example for aesthetic value of Nature
- Eco-tourism a huge potential can be tapped to have benefits and the same time restore the environment/ecosystem
- Tourism; one of the important sources of income for many



CONSERVING THE GULMARG WLS

- Monitoring the important wildlife and other important resources
- Involving, interacting and awareness generation among the policy makers and the major stake holders
- Sustainable use and controlled tourism
- Releasing pressure on subalpine and alpine meadows by regulating livestock numbers



CONSERVING THE GULMARG WLS

- Control unwise development and encroachment
- Improve infrastructure and manpower
- Divert part of the transient Bakkarwals to other routes





THANK YOU