

## Floristic Inventory of Village Chitral, District Narowal, Pakistan

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### Abstract:

*The present paper explores the area with reference to its flora. Plant specimens were collected from January, 2012 to June, 2012 at village Chitral. The study area was visited regularly and so many specimens were collected. These specimens after collection were dried, pressed and then mounted on sheets. After that they were identified by herbaria of PMAS-Arid Agriculture University, Rawalpindi and Quaid-e-Azam University, Islamabad and deposited in the department of Botany, PMAS-Arid Agriculture University for record.*

**Key words:** Flora, Habitat, Life forms, Inventory

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## **I. Introduction**

The term flora comes from Latin language “Flora”; the goddess of flower in Roman mythology. A flora may contain a single list of plant occurring in an area to a very detailed account of those plants, there are various types of flora such as native flora, agricultural flora or garden flora, weed flora etc. A wide range of flora is available ranging from concise or field flora (Ali, 2008). Pakistan is fairly large country endowed with the variety of climates ecological zones and topographical region and almost conceivable types of natural habitats are met in our country. The flora is likewise, extremely varied and diverse. Nearly six thousand species of flowering plants are reported to be in occurring in Pakistan and Kashmir. Pakistan has rich diversity in the flora. There are around 5,700 species of vascular which include both indigenous and alian species (Stewart, 1972). District Narowal spreads over an area of 3, 12,915 square acres. The climate is hot during summer and cold during winter. It is bounded on the North and North East occupied Jammu and Kashmir State, on the East and South East by Gurdaspur and Amritsar Districts of India, on the West and South West by Narowal and Sialkot. The soil is sandy clay loam (Zaheer and Sardar, 2009).

## **II. Material and Method**

The study area was Chitral near Tehsil Shakargarh and District Narowal. Total area was 52km square. Average rain fall was about 1000 mm. Height was 375m. Latitude and altitude is 32 and 74 respectively. Plant specimens were collected from January, 2012 to June, 2012. The whole study area was surveyed regularly and wide range of plant specimens was gathered. All these was dried, pressed and mounted on sheets. The collected specimens were identified with help of floras (Stewart, 1972) and Nasir and Ali (2001). For the

identification of plant specimens Quaid-e-Azam University of Islamabad and PMAS- Arid Agriculture University, Rawalpindi was required and finally correctly identified specimens was deposited in the herbarium of PMAS-Arid Agriculture University, Rawalpindi for record. All the plants collected and identified were compiled alphabetically with respect to their scientific and common names and was presented in this paper. This report contains specimen name, number, name of collector, collection data along with their flowering and fruiting periods etc.

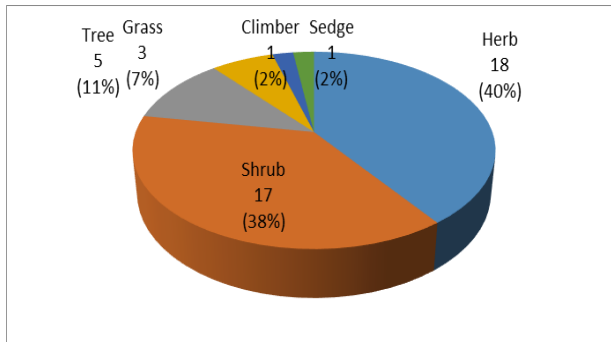
### III. Results and Discussion

A total of 45 plant species were collected from study area, out of 45, 18 were herbs, 17 were shrubs, 5 were trees, 3 were grasses, 1 was climber and 1 was sedge. Herbs and Shrubs were about in equal number because the soil conditions and climatic conditions were favorable for growth of them. Trees were less in number because human activities have affected the natural vegetation and cut down many trees for their purpose. Grasses were also less in number. Climbers and Sedges were very few in number because climatic conditions were not good for them. Life form comprised of 51.11% Therophytes, 35.66% Phanerophytes, 11.11 % Hemicryptophytes and 2.22 % Cryptophytes. *Asteraceae* was the most dominant family in study area followed by *Brassicaceae*, *Euphorbiaceae*, *Solanaceae*, *Poaceae*. The plants of these species were very abundant which shows environmental/Climatic conditions better for them. The plants of families' i.e, *Verlunaceae*, *Oleaceae*, *Canalinaceae* etc. were very few in number because of environmental/Climatic conditions not so good for them. The following "Table 1" describes the list of plants with respect to their habitat.

**Table 1: List of Plant Species Recorded with their Habitats**

s.#	Botanical Name	Common Name	Family Name	Habit					
				Herb	Shrub	Tree	Grass	Climber	Sedge
1	<i>Abutilon indicum</i> L.	Peeli booti	Malvaceae	0	1	0	0	0	0
2	<i>Acalypha brachycarpa</i> L.	-	Euphorbiaceae	0	1	0	0	0	0
3	<i>Achyranthes aspera</i> L.	Putkanda	Amaranthaceae	1	0	0	0	0	0
4	<i>Amaranthus viridis</i> L.	Choali	Amaranthaceae	1	0	0	0	0	0
5	<i>Brassica alba</i> L.	Tori	Brassicaceae	0	0	1	0	0	0
6	<i>Calotropis procera</i> (Wild.)R.Br.	Aak	Asclepiadaceae	0	1	0	0	0	0
7	<i>Canabis sativa</i> L.	Bhang	Canalinaceae	0	1	0	0	0	0
8	<i>Canna indica</i> L.	---	Cananaceae	1	0	0	0	0	0
9	<i>Canodon dactylon</i> L.	Gass	Poaceae	0	0	0	1	0	0
10	<i>Canvalvulus arvensis</i> L.	Leli	Convolvulaceae	0	1	0	0	0	0
11	<i>Canya banariensis</i> L.	<i>Gidar buti</i>	Asteracear	1	0	0	0	0	0
12	<i>Canya canadensis</i> Linn.	Paleet	Asteracear	0	1	0	0	0	0
13	<i>Capsella bursa-pestoris</i> (L.)Medic	Shepherd purse	Brassicaceae	0	1	0	0	0	0
14	<i>Carissa opaca</i> Stap ex.Haines.	Grinda	Apocynaceae	0	1	0	0	0	0
15	<i>Coronopis didymus</i> (L.) Sm.	Jangli palak	Brassicaceae	1	0	0	0	0	0
16	<i>Cyperus sruindus</i> L.	-	Cyperaceae	0	0	0	0	0	1
17	<i>Dactyloctenium aegyptium</i> L.	Gandeel	Poaceae	0	0	0	1	0	0
18	<i>Diclyptera roxburghiana</i> Nees.	-	Acanthaceae	1	0	0	0	0	0
19	<i>Euclyptus globulens</i> L.	Safaidda	Myrtaceae	0	0	1	0	0	0
20	<i>Euphorbia granulata</i> Forssk.	Sheer Bar	Euphorbiaceae	1	0	0	0	0	0
21	<i>Euphorbia helioscopia</i> L.	Chhatri dodak	Euphorbiaceae	1	0	0	0	0	0
22	<i>Ficus pumila</i> L.	IVI	Moraceae	0	1	0	0	0	0
23	<i>Foeniculum vulgare</i> Miller.	Sonf	Apiaceae	1	0	0	0	0	0
24	<i>Jasminum mesnyi</i> L.	Jasminium	Oleaceae	0	1	0	0	0	0
25	<i>Lamium amplexicaule</i> L.	-	Lamiaceae	1	0	0	0	0	0
26	<i>Lantana camara</i> L.	Panch phuli	Verlunaceae	0	1	0	0	0	0
27	<i>Macfadyena unguis-cati</i> L.	-	Bignoniaceae	0	0	0	0	1	0
28	<i>Malvestrum coramedalianum</i> L.	Malvestrum	Malvaceae	1	0	0	0	0	0
29	<i>Moras alba</i> L.	Tut	Moraceae	0	0	1	0	0	0
30	<i>Oenothera rosea</i> Lher.ex.Aiton	Makhna	Asteracear	1	0	0	0	0	0
31	<i>Parthenium hysterophorus</i> L.	Gandi booti	Asteracear	0	1	0	0	0	0
32	<i>Pongamia pinnata</i> L.	Suk chain	Papilionaceae	0	0	1	0	0	0
33	<i>Prosopis juliflora</i> (SW.) DC.	Jungli Kiker	Mimosaceae	0	1	0	0	0	0
34	<i>Ricinus communis</i> L.	Arind	Euphorbiaceae	0	1	0	0	0	0
36	<i>Sonchus asper</i> L.	Dodak	Asteracear	0	1	0	0	0	0
37	<i>Silybum maritimum</i> Gaertn.	Kandiari	Asteracear	0	1	0	0	0	0
38	<i>Solanum americanum</i> ( Mill.)L.	-	Solanaceae	1	0	0	0	0	0
39	<i>Solanum nigrum</i> L.	Mako	Solanaceae	1	0	0	0	0	0
40	<i>Sonchus arvensis</i> L.	Dudh bhatal	Asteracear	1	0	0	0	0	0
41	<i>Sorghum helopense</i> L.	Baru	Poaceae	0	0	0	1	0	0
42	<i>Stellaria media</i> L.	-	Caryophyllaceae	1	0	0	0	0	0
43	<i>Trifolium repens</i> L.	Barseem	Papilionaceae	1	0	0	0	0	0
44	<i>Triticum astivum</i> L.	Gandum	Poaceae	1	0	0	0	0	0
45	<i>Withania somnifera</i> L.	Asghand	Fabaceae	0	1	0	0	0	0
		<b>Total</b>		18	16	5	3	1	1
		<b>%age</b>		40.00	35.56	11.11	6.67	2.22	2.22

Most of the flora comprised annual plants and herbs were found as the common fraction with 40 % which is followed by shrub 38%, trees 11% and Grasses 7%) whereas rest of plants were in negligible proportion and it is shown in "Fig. 1".



**Fig. 1: Habits of Plants in Study Area**

Plants exhibit different life forms. "Table 2" listed those plants with respect to their life forms.

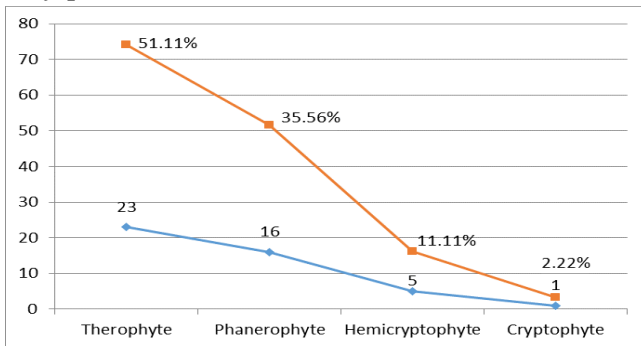
**Table 2: Life Form of Plant Species**

Sr. #	Botanical Name	Common Name	Family	Life Form	Life Form	Life Form	Life Form
				Cryptophyt e	Hemicryptophyte	Phanerophyte	Therophyte
1	<i>Abutilan indicum L.</i>	Peeli booti	Malvaceae	0	0	1	0
2	<i>Acalypha brachycarpa L.</i>	-	Euphorbiaceae	0	1	0	0
3	<i>Achyranthes aspera L.</i>	Putkanda	Amaranthaceae	0	0	0	1
4	<i>Amaranthus viridus L.</i>	Choali	Amaranthaceae	0	0	0	1
5	<i>Euclyptus globulens</i>	Safaidda	Myrtaaceae	0	0	1	0
6	<i>Solanum nigrum L.</i>	Mako	Solanaceae	0	0	0	1
7	<i>Sonchus arvensis L.</i>	Dudh bhatal	Asteraceae	0	0	0	1
8	<i>Brassica alba L.</i>	Tori	Brassicaceae	0	0	1	0
9	<i>Calotropis procera (Willd.) R.Br.</i>	Aak	Asclepiadaceae	0	0	1	0
10	<i>Canabis sativa L.</i>	Bhang	Canalinaceae	0	0	0	1
11	<i>Canna indica L.</i>	-	Cananaceae	0	0	0	1
12	<i>Canodon dactylon L.</i>	Gass	Poaceae	0	1	0	0
13	<i>Canvalvulus arvensis L.</i>	Leli	Convolvulaceae	0	0	1	0
14	<i>Canyza banariensis L.</i>	Gidar buti	Asteraceae	0	0	0	1
15	<i>Canyza canadensis Linn</i>	Paleet	Asteraceae	0	0	0	1
16	<i>Capsella bursa-pestoris L.(Medic)</i>	Shepherd purse	Brassicaceae	0	0	0	1
17	<i>Carissa opaca Stap ex.Haines</i>	Grinda	Apocynaceae	0	0	1	0

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Sr. #	Botanical Name	Common Name	Family	Life Form	Life Form	Life Form	Life Form
				Cryptophyte	Hemicryptophyte	Phanerophyte	Therophyte
18	<i>Coronopsis didymus</i> L.	Jangli palak	Brassicaceae	0	1	0	0
19	<i>Cyperus srundus</i> L.	-	Cyperaceae	0	1	0	0
20	<i>Dactyloctenium aegypticium</i> L.	Gandeel	Poaceae	0	1	0	0
21	<i>Diclyptera roxburghiana</i> Nees.	-	Acanthaceae	0	0	0	1
22	<i>Euphorbia granulata</i> Forssk.	Sheer Bar	Euphorbiaceae	0	0	0	1
23	<i>Euphorbia helioscopia</i> L.	Chahatri Dodak	Euphorbiaceae	0	0	0	1
24	<i>Ficus pumila</i> L.	IVI	Moraceae	0	0	1	0
25	<i>Foeniculum vulgare</i> Miller.	Sonf	Apiaceae	0	0	0	1
26	<i>Jasminum mesnyi</i> L.	Jasminum	Oleaceae	0	0	1	0
27	<i>Lamium amplexicaule</i> L.	-	Lamiaceae	0	0	0	1
28	<i>Lantana camara</i> L.	Panch phuli	Verlunaceae	0	0	1	0
29	<i>Malvestrum coramendalianum</i> L.	Malvestrum	Malvaceae	1	0	0	0
30	<i>Mcdynia unguis-cati</i> L.	-	Bignoniaceae	0	0	1	0
31	<i>Moras alba</i> L.	Tut	Moraceae	0	0	1	0
32	<i>Oenothera rosea</i> Lher.ex.Aiton	Makhna	Onagzaceae	0	0	0	1
33	<i>Parthenium hysterophorus</i> L.	Gandi booti	Asteracear	0	0	0	1
34	<i>Pongamia pinnata</i> L.	Suk chain	Papilionaceae	0	0	1	0
35	<i>Prosopis juliflora</i> (SW.)DC.	Jungli Kiker	Mimosaceae	0	0	1	0
36	<i>Ricinus cammunis</i> L.	Arind	Euphorbiaceae	0	0	0	1
37	<i>Salvia puliflora</i> L.	-	Lamiaceae	0	0	1	0
38	<i>Sanchus asper</i> L.	Dodak	Asteracear	0	0	1	0
39	<i>Silybum marinum</i> L.	Kandiari	Asteracear	0	0	0	1
40	<i>Solanum americanum</i> Mill.	-	Solanaceae	0	0	0	1
41	<i>Sorghum helepense</i> L.	Baru	Poaceae	0	0	0	1
42	<i>Stellaria media</i> L.	-	Caryophyllaceae	0	0	0	1
43	<i>Trifolium repens</i> L.	Barseem	Papilionaceae	0	0	0	1
44	<i>Triticum astivum</i> L.	Gandum	Poaceae	0	0	0	1
45	<i>Withania somnifera</i> L.	Asghand	Euphorbiaceae	0	0	1	0
		<b>Total</b>		1	5	15	23

"Fig. 2" clearly reveals the percentage of different life forms exhibited by plants.



**Fig. 2: Life forms of Plants in Study Area**

Following habitats are based on topography of an area. These micro habitats are as follows.

Plain areas are important because where the soils were deposited as sediments that may be deep and fertile. It supports grasslands which provide good grazings. Plain areas soil is silty and loamy. Silt is composed of fragments of rock minerals. Silt has ability to absorb and retain water. Loam is a soil in which sand, silt and clay particles are present more or less in equal proportion. In plain areas soil gravels are present. Such soil also contains mineral in valuable amount. Gravels are composed of large mineral particles. This type of soil is best for all types of vegetation i.e. herbs, shrubs and trees. 34 plant species were present in plain side of study area.

Roads sides are stressful environment for vegetation. Although gravels are present in large amount but minerals are very less in amount so vegetation is not so good. Actually road sides are man-made created environment when the roadway was constructed. Often soils are compacted. The exposure to wind, smoke and toxic contaminant deposited by that traffic make road side a dry and harsh environment for plants. 15 plant species were recorded in road sides. There was loamy soil with high humidity conditions. Less diversity of species

recorded from this habit because it is highly saline soil. 7 plant species were recorded in river side. Plants of different micro-habitat are listed below in "Table 3".

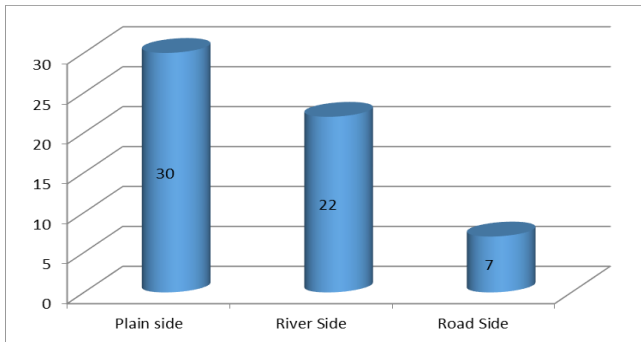
**Table 3: The Micro-Habitats of Different Plant Species**

S.#	Botanical Name	Common Name	Family	Plain side	River side	Road side
1	<i>Abutilon indicum</i> L.	Peeli booti	Malvaceae	0	0	1
2	<i>Acalypha brachycarpa</i> L.	-	Euphorbiaceae	1	0	0
3	<i>Achyranthes aspera</i> L.	Putkanda	Amaranthaceae	1	0	1
4	<i>Amaranthus viridis</i> L.	Choali	Amaranthaceae	1	0	0
5	<i>Brassica alba</i> L.	Tori	Brassicaceae	1	0	0
6	<i>Calotropis procera</i> (Willd.)R.Br.	Aak	Asclepiadaceae	0	0	1
7	<i>Canabis sativa</i> L.	Bhang	Canalinaceae	1	0	1
8	<i>Canna indica</i> L.	---	Cananaceae	1	0	0
9	<i>Canodon dactylon</i> L.	Gass	Poaceae	1	1	0
10	<i>Canvalvulus arvensis</i> L.	Leli	Convolvulaceae	0	0	1
11	<i>Canyza banariensis</i> L.	<i>Gidar buti</i>	Asteracear	1	0	1
12	<i>Canyza canadensis</i> Linn	Paleet	Asteracear	0	0	1
13	<i>Capsella bursa-pastoris</i> (L.)Medic	Shepherd purse	Brassicaceae	0	1	0
14	<i>Carissa opaca</i> Stap ex.Haines	Grinda	Apocynaceae	1	0	0
15	<i>Coronopsis didymus</i> (L.) Sm.	Jangli palak	Brassicaceae	1	0	0
16	<i>Cyperus srundus</i> L.	-	Cyperaceae	1	0	1
17	<i>Dactyloctenium aegyptium</i> L.	Gandeel	Poaceae	1	0	0
18	<i>Diclyptera roxburghiana</i> Nees.	-	Acanthaceae	0	1	0
19	<i>Euclyptus globulens</i> L.	Safaida	Myrataceae	1	0	0
20	<i>Euphorbia granulata</i> Forssk.	Sheer Bar	Euphorbiaceae	0	1	0
21	<i>Euphorbia helioscopia</i> L.	Chhatri dodak	Euphorbiaceae	0	1	1
22	<i>Ficus pumila</i> L.	IVI	Moraceae	1	0	0
23	<i>Foeniculum vulgare</i> Miller.	Sonf	Apiaceae	1	0	1
24	<i>Jasminum mesnyi</i> L.	Jasmium	Oleaceae	1	0	0
25	<i>Lamium amplexicaule</i> L.	-	Lamiaceae	1	0	0
26	<i>Lantana camara</i> L.	Panch phuli	Verlunaceae	1	0	0
27	<i>Macfadyena unguis-cati</i> L.	-	Bignoniaceae	1	0	0
28	<i>Malvestrum coramentalianum</i> L.	Malvestrum	Malvaceae	1	0	1
29	<i>Moras alba</i> L.	Tut	Moraceae	1	0	1
30	<i>Oenothera rosea</i> Lher.ex.Aiton	Makhna	Asteracear	1	0	0
31	<i>Parthenium hysterophoru</i> L.	Gandi booti	Asteracear	0	0	1
32	<i>Pongamia pinnata</i> L.	Suk chain	Papilionaceae	1	0	1
33	<i>Prosopus juliflora</i> (SW.)DC.	Jungli Kiker	Mimosaceae	1	0	0
34	<i>Ricinus communis</i> L.	Arind	Euphorbiaceae	1	0	0
35	<i>Salvia puliflora</i> L.	-	Lamiaceae	1	1	0
36	<i>Santhus asper</i> L.	Dodak	Asteracear	0	0	1
37	<i>Silybum marinum</i> Gaertn.	Kandiari	Asteracear	1	1	0
38	<i>Solanum americanum</i> Mill.		solanaceae	1	0	1
39	<i>Solanum nigrum</i> L.	Mako	Solanaceae	1	0	0
40	<i>Sonchus arvensis</i> L.	Dudh bhatal	Asteracear	0	0	1
41	<i>Sorghum helepense</i> L.	Baru	Poaceae	0	0	1
42	<i>Stellaria media</i> L.	-	Caryophyllaceae	0	0	1
43	<i>Trifolium repens</i> L.	Barseem	Papilionaceae	0	0	1
44	<i>Triticum astivum</i> L.	Gandum	Poaceae	1	0	1



S.#	Botanical Name	Common Name	Family	Plain side	River side	Road side
45	<i>Withania somnifera</i> L.	Asghand	Fabaceae	0	0	1

Graphical demonstration of different micro habitats is shown in "Fig. 3".



**Fig. 3: Graph Showing Microhabitats in Study Area**

#### IV. Conclusion

This study provides floristic account of plant species found in study area Chitral. Along the plain sides and road sides, vegetation comprised shrubs. Vegetation can utilize the transient water stored in the upper soil synchronic with precipitation. The upped dry layer of the surface deposits acts as a protective layer, moisture is stored in subsurface layers, and the underlying sandstone provides added water storage capacity. The natural flora is under the influence of biotic pressure and under the threat of over population. Confined places where severe plants are flourishing such as parks and garden. Prefatory measures should be taken to save the species for the future.

#### V. ACKNOWLEDGEMENT

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