



PRELIMINARY SURVEY OF RIPARIAN VEGETATION OF THE SPRING-FED STREAM KYUNJA GAD, A TRIBUTARY OF RIVER MANDAKINI, RUDRPRAYAG GARHWAL, UTTARAKHAND

Pratibha Baluni¹ and Ashita Chandola²

¹Ecology Lab, Department of Botany, A.P.B. Govt. P.G. College Agustyamuni-246421, District - Rudraprayag, Uttarakhand.

²Ex- Faculty in Botany, R/O University Residences, Ayarpata, Nainital- 263001

Corresponding Author Email id: pankajpaurii@gmail.com

Received: 12.10.2019; Revised: 17.11.2019; Accepted: 12.12.2019

©Society for Himalayan Action Research and Development

Abstract: The vegetation around a river or stream is called riparian vegetation. The quality of riparian vegetation has direct influence on the quality of life in water. The fallen leaves and twigs of the riparian flora accumulated in side streams and after some time makes a detritus which becomes an intrinsic part of the stream and contributes to its productivity as food of various benthic and nektonic organisms. In the present contribution, an attempt has been made to enlist the riparian vegetation around spring-fed stream Kyunja gad, tributary of the glacier-fed river Mandakini in District Rudraprayag, Garhwal, Uttarakhand. Total twenty-one tree species and twelve species of herbs and shrubs were observed.

Keywords: Riparian, Kyunja gad, Mandakini, Rudraprayag

Introduction

The importance of riparian vegetation has been well understood by the aquatic biologists and hence lot of work has been conducted on this aspect. The submerged flora contributes towards productivity through photosynthesis and also by contributing nutrients. The catchment riparian helps in binding soil and avoids its erosion, thus quality of stream is improved (Sagir and Dobriyal, 2018). The influence of riparian vegetation on riverine ecology has been studied by Pusey and Arthington (2003) and Rios and Bailey (2006). In Garhwal region, the riparian vegetation is studied by Balodi, et.al. (2004) in Eastern Nayar, Aziem et.al. (2016) in Bhilangana valley and Sagir and Dobriyal (2017, 2018) in the river Western Nayar. In the present contribution an attempt has been made to study the riparian vegetation around stream Kunja gad in Rudraprayag Garhwal.

Material and Methods

The Kyunja Gad is a tributary of the snow-fed River Mandakani in District Rudraprayag Garhwal Uttarakhand. It is situated in the Latitude 30° 25' 45" N and Longitude 79° 08' 35" E and receives water from numerous springs, underground seepage and surface runoff. The riparian vegetation of the stream was studied around Senagarsari. Plants were identified by using local names consulted by the local inhabitants and then correlated by using different available floras. Subject experts of HNB Garhwal University, Srinagar Garhwal and Kumaun University were also consulted.

Results and Discussion

A total of 21 tree species and 12 herbs and shrub species were identified and presented in Table 1. Out of these 14 plants were known to be used as medicinal plants.



Table 1: List of Riparian vegetation along the Kyunja Gad 1st order stream.

S.No	SCIENTIFIC NAME	COMMON NAME	FAMILY	AVAILABILITY (M=Medicinal)
A	Trees			
1	<i>Cedrus deodara</i> (Roxb.ex Lambert.).Don	Devdar	Pinaceae	Common (M)
2	<i>Rhododendron arboreum</i> Smith	Burans	Ericaceae	Common (M)
3	<i>Aesculus indica</i> (Wall.ex Camb.) Hook.f.	Paangar	Hippocastanaceae	Common
4	<i>Alnus nepalensis</i> D.Don	Uthis	Betulaceae	Common
5	<i>Capressus torulosa</i> D.Don	Bhotiya badam	Betulaceae	Occasional
6	<i>Celtis australis</i> Linn	Khadic	Ulmaceae	Common
7	<i>Cinnamomum lumala</i> Nees	Daalchini/tejpata	Lauraceae	Occasional
8	<i>Citrus medica</i> Linn	Narangi	Rutaceae	Common
9	<i>Occulus laurifolius</i> DC	Tilkar/tilfada	Menispermaceae	Common
10	<i>Dalbergia sissoo</i> Roxb.	Surai	Cupressaceae	Common
11	<i>Ficus benghalensis</i> Linn.	Timla	Moraceae	Common
12	<i>Grewia optiva</i> J.R Drumn. ex Burrett	Bhemal	Tiliaceae	Common
13	<i>Juglans regia</i> Linn.	Akhroot/akhod	Juglandaceae	Common (M)
14	<i>Mangifera indica</i> Linn.	Aam	Anacardiaceae	Common
15	<i>Myrica esculenta</i> (butch-Ham.ex.D.Don	Kafal	Myricaceae	Common (M)
16	<i>Prunus cerasoides</i> D.Don. xyn	Padam/ paiyan	Rosaceae	Common (M)
17	<i>Prunus persica</i> (L) Batsch	Aadu	Rosaceae	Common (M)
18	<i>Punica coommunis</i> L.	Annar	Punicaceae	Common (M)
19	<i>Pyrus communis</i> L.	Naspati	Rosaceae	Common
20	<i>Pyrus pashia</i> Buch-hem.ex. D.Don	Mehal	Rosaceae	Common (M)
21	<i>Toona ciliata</i> M.Roem.Syn.	Tun	Meliaceae	Common
B	WOODY CLIMBERS/ SHRUBS/ HERBS			
22	<i>Berberis asiatica</i> Roxb. ex DC	Kilmoda	Berberidaceae	Common
23	<i>Cannabis sativa</i> Linn.	Bhang	Cannabaceae	Common
24	<i>Carissa opaca</i> Stapf ex Haines syn. <i>Carrisa spinarum</i> A.DC.	Karonda	Apocynaceae	Common
25	<i>Cannabis sativa</i> Linn.	Bhang	Cannabaceae	Common
26	<i>Datura stramonium</i> Linn.	Dhatura	Solanaceae	Common (M)
27	<i>Lantana camera</i> Linn.	Kurri	Verbiniaceae	Common (M)
28	<i>Pyracantha crenulata</i> (D.Don)	Ghigharu	Rosaceae	Common
29	<i>Urtica dioica</i> Linn.	Kandali/bichughass	Urticaceae	Common (M)
30	<i>Vateriana hardwickii</i> Wall.	Samoya/tager	Valerianaceae	Occasional (M)
31	<i>Dioscorea belophylla</i> (Prain) Haines syn. <i>Dioscorea glabra</i> Hook.f.p.p.	Taidu/tarud	Dioscoreaceae	Common (M)
32	<i>Dioscorea bulbifera</i> Linn.	Gethi/ratalu	Dioscoreaceae	Common (M)
33	<i>Trichosanthes palmate</i> Roxb.	Ilaadu/indarians	Cucurbitaceae	Common



The riparian vegetation in the Kunja stream was observed as rich and conducive for the biological productivity as in another study we have observed rich epilithic periphyton and detritus standing stock along with macro zoobenthos. According to Hynes (1975) there is a strong linkage between riparian vegetation and stream biota. Shyam (2008) linked the importance of riparian vegetation to anthropogenic requirement during his study in river Ganga. Srivastava (2007) has opined that riparians definitely affects the geomorphology and physico chemistry of the river system. Sagir and Dobriyal (2017,2018) have studied the riparian vegetation of Western Nayar and concluded that they form detritus and hence positively affect the production of macrozoobenthos and fishes.

Acknowledgement

The authors are grateful to Prof. A K Dobriyal, Head of Zoology Department, H N B Garhwal University Campus, Pauri Garhwal for encouragement and critically going through the manuscript. Help in taxonomical identification of plants rendered by Prof N S Bisht, Department of Botany H N B Garhwal University Campus, Pauri Garhwal is also thankfully acknowledged.

References

- Aziem, S., Dasgupta, S., Mishra, A.K., Saha, S. and Yadav, P.K. (2016). Riparian phytodiversity status of pristine Bhilangana valley of Garhwal Himalaya: An undocumented retrospective hitherto. *J Biodiverse Manage Forestry* 5 (2): <http://dx.doi.org/10.4172/2347-4417.1000156>.
- Balodi, V.P., Dobriyal, A.K., Joshi, H.K., Uniyal, S.P. & Thapliyal, A. (2004). Epilithic periphyton and detritus ecology of the spring-fed stream Eastern Nayar in Garhwal Himalaya. *Environmental Conservation Journal*. 5(1-3): 1-5
- Hynes, H.B.N. 1975 The stream and its valley. *Verh. Int. Ver.Limnol.* **19**, 1 – 15.
- Pusey, B.J and Arthington, A.H. (2003), Importance of the riparian zone to the

conservation and management of freshwater fishes :A review, *Marine and freshwater Research*, No. 54,pp.1-6

- Rios,S.L and Baily,R.C (2006).Relationship between riparian vegetation and stream benthic communities at three spatial scales. *Hydrobiologia*, 553:153-160.
- Sagir, M. and Dobriyal, A. K. (2017). Diversity of riparian vegetation in Western Nayar valley on selected experimental spots. *J. Mountain Res.*12: 115-118.
- Sagir, M. and Dobriyal, A.K., (2018). Influence of riparian vegetation on detritus standing stock of western Nayar valley Uttarakhand. *Int. Res. Anal. Rev.* 5(04): 1051-1064.
- Shyam R. (2008). *A study on riparian floral biodiversity of river Ganga between Haridwar and Gangotri*. Ph. D. Thesis Gurukul Kangri University, Haridwar.
- Srivastava, V.K (2007) River Ecology in India : present status and future research research strategy for management and conservation. *Proc.Indian natn Sci Acad.* 73 No. 4 pp. 255-269.
