



## Mythological history, traditional practices and plant diversity of deoria tal: a sacred wetland of Garhwal Himalaya, India

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### Abstract

Religious beliefs, fairs, traditions, and cultural practices of himalayan people always play an important role in the conservation of biodiversity and management of natural resources. The Himalayan flora is rich and diverse with varying altitude, climate, and ecological habitats. The present study encompasses on the mythological history, traditional practices and plant diversity of the sacred wetland Deoria Tal, which is located in the lap of Garhwal Himalaya, surrounded by rich vegetation and snowy mountains ranges. A survey was undertaken for the study of plant diversity of the wetland from its understory and upper limits. A total number of 10 tree species, 11 shrubs and 21 herbs with their ethnomedicinal properties were recorded during the study period of two years from April 2014-March 2016.

**Keywords:** Garhwal Himalaya, Mahabharata, Myths, Mela, Sacred wetland.

### Introduction

The word Himalaya is derived from the Sanskrit word *him* (snow) and *alaya* (home), which means abode of snow. It not only provides innumerable services to mankind, it is the place for various saints and seers to perform their *sadhana* (religious practice). The important and holy rivers of India like *Ganga* and *Yamuna* originated from the Garhwal Himalaya. The Himalaya is one of the richest and youngest of all the mountains with a variety of floral and faunal diversity because of its varying altitude, climate and ecological habitats<sup>1</sup>. Garhwal Himalaya is called as land of gods or *Dev Bhoomi*<sup>2</sup>. The people from the different parts of the India visit the place to perform various rituals. From the ancient history, Himalayan people have been conserving the rich biodiversity, lakes, rivers, and streams with their traditional beliefs and knowledge. One of the sacred places is the wetland Deoria Tal which is famous for its enchanting and picturesque landscape as well as habitat to a variety of floral and faunal diversity. The Himalaya is a holy place for gods and goddesses that have a strong connection with the Indian cultural and sacred ethos. The Himalaya acts as an important supplier of freshwaters and regulates different extremes of weather and climate. These lakes of Garhwal Himalaya are breeding ground for various migratory birds, fish, amphibians, and habitat for many endemic faunal species.

The Himalaya is considered as the hotspots of biodiversity because of the presence of various endemic species. Plants have been regarded as an essential part of life. *Atharveda*, *Rig-veda* and *Charaka Samhita* revealed plentiful benefits of Himalayan plants<sup>3</sup>. The wetland serves as a home for avian, terrestrial and

aquatic biodiversity and therefore helps in conservation of biodiversity. The local people of Garhwal Himalaya depend on plants for fuel, fodder, wood (agricultural implements) and, medicines (made by local *Vaidyas*). The Himalayan people utilize plant resources for livelihoods. The local *Vaidyas* use their indigenous knowledge and practice of *Ayurveda* for the ailment of different diseases. According to WHO, 80% human population still depends on traditional medicines<sup>4,5</sup>. Garhwal Himalayan wetlands, lakes and ponds are full of rich biodiversity; but due to their longer trek routes and inaccessibility, it has become a major issue to understand their current status from their sustainable and conservation point of view. In this paper, research was being done in order to document the knowledge on the beliefs, myths and plant diversity of the area. A lot of work has been done on the medicinal plants, traditional practices, biodiversity conservation and terrestrial diversity of Himalayan forests<sup>2,6-16</sup>. However, there is no data available for the Garhwal Himalayan lakes and wetlands as far as their mythology and plant diversity is concerned.

**Study area:** The Garhwal Himalayan wetland Deoria Tal is located in the Uttarakhand state (Rudraprayag district) and surrounded by famous mountain peaks like Chaukhamba, Neelkantha, Bandarpunch, and Kalanag. It has an altitude of 2,445 m a.s.l, latitude 30°31'44" N and longitude 79°07'48" E with a distance of 12 km from Ukhimath through *Tala* and *Sari* villages. It has a total circumference and area of 759.62m and 2.65ha respectively (Figure-1). There is a trek of 2.5km towards Deoria Tal from the village Sari. The wetland is famous for its magnificent beauty (Figure-2), cool temperate climate and

topographic conditions with rich biodiversity, cultural, rich vegetation from the two sides, while the remaining sides are open, mythological and traditional values. The lake is surrounded by

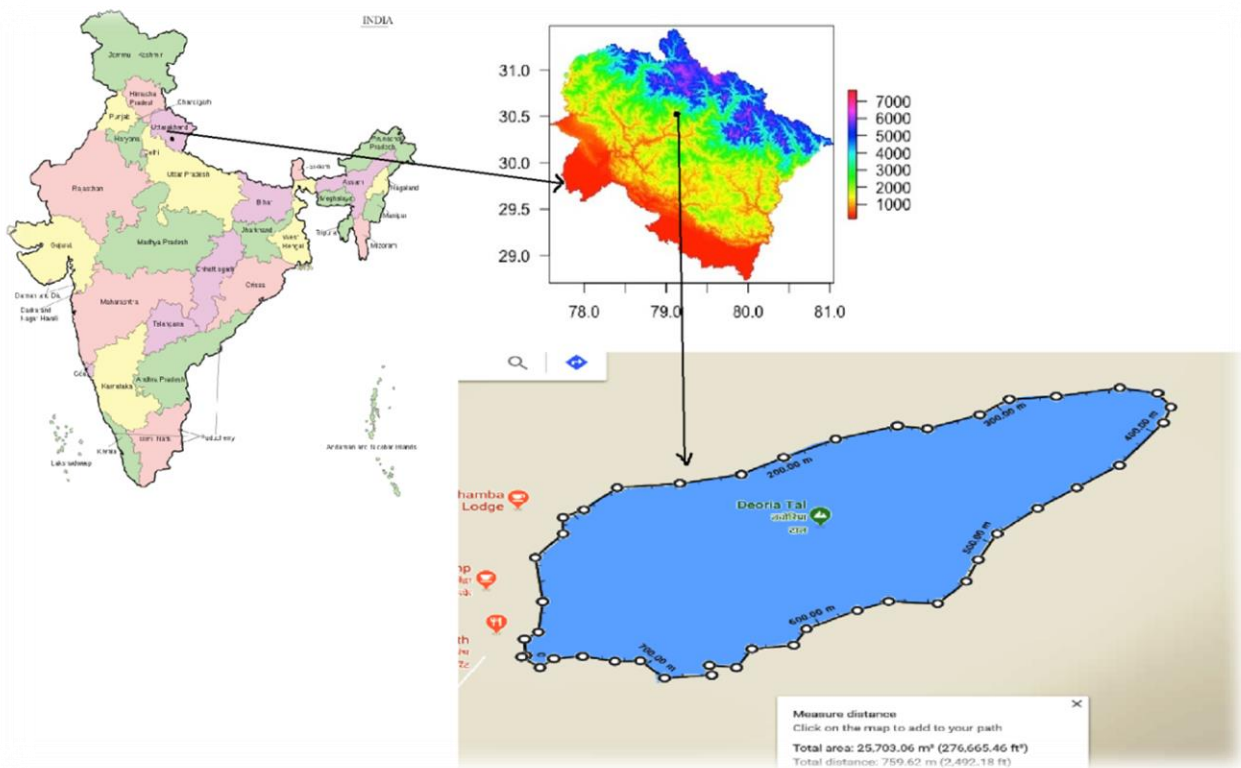


Figure-1: Physiography of the study area (Source: Google Earth).



Figure-2: Magnificent view of the wetland Deoria Tal.



## Methodology

The visual observation was made by interviewing the locals of the Sari village, forest beat officer, and caretaker of the forest department at Deoria wetland. The interviewer comprises men-women of the Sari village, priest of the Omkar Ratneshwar Mahadev temple (1 kilometer towards trek to Deoria wetland from village Sari). The personal interviews and observations were made at regular intervals and field trips during the festival month of both the years. The survey was also done for the floral diversity of wetland's understory and upper limits. The flora with their ethnomedicinal values were identified by books, research articles and few database sites<sup>6,9,11,15-17</sup>.

## Results and discussion

Deoria Tal is also known as *Devariya Tal* as the *Devas* (Hindu gods) bathes in this lake, hence named as Deoria. According to Hindu mythology, this place is known as "*Indra Sarovar*" (*Indra* is the God of heaven and *sarovar* is lake). Fishing is strictly prohibited in the wetland, and there is a taboo that the fisherman will suffer from leprosy<sup>18</sup>. This wetland has so many mythological legends since epic period of *Mahabharata*. When *Pandavas* (heroes of *Mahabharata*) were moving in search of water and didn't find any source, then Lord Krishna with the help of *Vasuki* (several headed snake) created the wetland to quench their thirst. It is also believed that *Yaksha* (in the form of a crane) asked questions from the *Pandavas*. The four, out of five died because of not answering the questions. The eldest one, *Yuddhishtira Pandavas* answers all the questions and allowed to drink water and *Pandavas* were revived. Every year on *Krishna Janmashtami* (festival dedicated to lord Krishna's birth), a fair (*mela*) is being organized at Deoria Tal wetland, in which a huge crowd gathers and celebrate the festival. People carry *Doli* (*palakeen*) of *Nagraj* (Figure-3 and 4) and circulate it around the wetland, worship with bells and *dhoop* (incense stick) and sing their traditional songs. There is a famous temple of *Nagraj* (God of Snake) called Omkar Ratneshwar Mahadev temple on the route to Deoria Tal, 1 km from the village Sari (Figure 5). The locals and tourists visit the temple and worship for blessings. The temple resembles the ancient architecture of famous temples of Uttarakhand like Kedarnath and Tungnath in terms of *Garbhagraha* and *Mandap*. Inside the *sanctum sanctorum* of the temple, there is a *lingam* in which water/milk is poured that resembles a snake wrapping over the *lingam* and liquid flows in a waveform just like a snake is moving in an anticlockwise direction.

Plant data provide the framework of the environment, provide resources and create habitats used by the other organisms as they are called "structural species". A large number of people depend on plant resources as they sustain the life support system on Earth. The plant resources perform a role in environmental stability, ecological balance, food security, environmental conservation and sustainable development and are the source of

fodder, fiber, gum, oils, tannin and herbal medicine to the people<sup>12</sup>.



Figure-3: Festival (Mela) on Krishna Janmashtami.



Figure-4: Palakeen of Nagraj (God of Snake) at Deoria Tal.



Figure-5: Omkar Ratneshwar Mahadev Temple (dedicated to Nagraj)

The Himalayan people have been conserving nature through various traditions and socio-religious impediments<sup>2</sup> and have a spiritual relationship with the existing physical environment. Various flowers and dried plant parts have been used to perform *puja* and for the preparation of *hawan samagri* for their deities. The local women collect dry wood to prepare the meal. The region has so many *taboos* like a fisherman will suffer from leprosy if found fishing in the sacred wetland. The orally transmitted traditional and social rules made for the conservation of plant, that are not in written form and regulate human behavior are known as *taboos*<sup>19</sup>. The plant species found in the watershed of Deoria Tal are *Acer caesium* Wall. Ex Brandis, *Aesculus indica* Wall. Ex Cambess Hook, *Anaphalis* sp., *Athyrium* sp., *Berberis aristata* DC., *Berberis asiatica* Roxb. ex DC, *Berberis lyceum* Royle., *Cedrus deodara* Roxb. G.Don, *Ceratophyllum demersum* L., *Clematis grata* O. Hoffm.

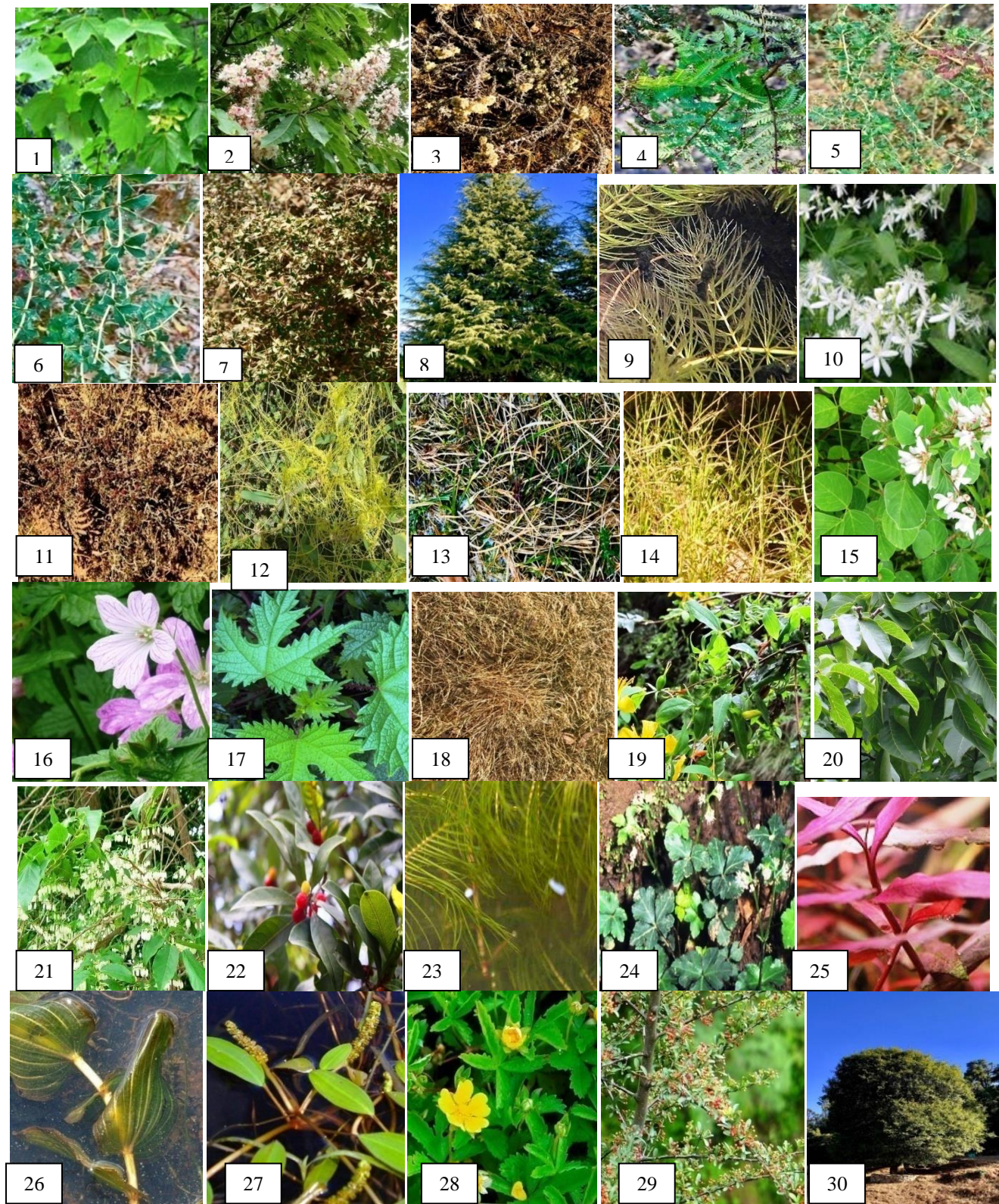
ex Baker, *Cotoneaster microphyllus* Wall. Ex. Lindl., *Cuscuta reflexa* Roxb., *Cyperus rotundus* L., *Cynodon dactylon* (L.) Pers., *Desmodium elegans* DC, *Geranium* sp., *Girardinia diversifolia* (Link) Friis, *Heteropogon* sp., *Juglans regia* L., *Hypericum oblongifolium* Choisy, *Lyonia ovalifolia* (Wall) Drude, *Myrica esculenta* Buch.-Ham. Ex D.Don, *Muriophyllum spicatum* L, *Pimpinella diversifolia* DC., *Polygonum amplexicaule* D (Don), Greene, *Potamogeton Perfoliatus* L. *Potamogeton epiphydrous* raf. *Potentilla* sp., *Pyracantha crenulata* (D.Don) M. Roem., *Quercus floribunda* Lindl. ex A. Campus, *Quercus leucotrichophora* A. Camus, *Quercus semecarpifolia* Sm., *Ranunculus* sp., *Rhododendron arboreum* Sm., *Rhus javanica* (L.) Merr, *Rubia manjith* Roxb., *Rosa moschata* Herrm., *Sarcococca saligna* (D.Don) Mull. Arg, *Solanum nigrum* L., *Thalictrum foliolosum* DC., *Trapa natans* L., *Viola* sp. (Table- 1 and Figure-6).

**Table-1:** List of Plant diversity found in the wetland Deoria Tal.

Scientific Name	Family	Common Name/ Vernacular Name	Ethno medicinal Uses
<i>Acer caesium</i> Wall. Ex Brandis	<i>Aceraceae</i>	Indian Maple <i>Kanjula</i>	Fuel, Medicinal (muscular swelling, boils and pimples)
<i>Aesculus indica</i> Wall. Ex Cambess, Hook	<i>Sapindaceae</i>	Himalayan Horse Chestnut, <i>Kanur</i>	Medicinal-Skin disorders, rheumatism, astringent
<i>Anaphalis</i> sp.	<i>Asteraceae</i>	Pearl or Pearly Everlasting	plant- burns, ulcers, swelling and rheumatic joints
<i>Athyrium</i> sp.	<i>Athyriaceae</i>	Lady Fern	Cures intestinal fever
<i>Berberis aristata</i> DC.	<i>Berberidaceae</i>	<i>Chutro</i> , Kingoor Indian Barberry	Fuel, fodder, Medicinal- ophthalmic, conjunctivitis and gastritis.
<i>Berberis asiatica</i> Roxb. ex DC	<i>Berberidaceae</i>	<i>Dar-hald</i> , <i>Daruhalidi</i> , Asian Barberry	Medicinal- eyes, skin disease, rheumatism, jaundice
<i>Berberis lyceum</i> Royle.	<i>Berberidaceae</i>	<i>Masholi</i> , <i>Raswanti</i> , <i>Kashmal</i>	Medicinal- Antibacterial, rheumatism
<i>Cedrus deodara</i> Roxb. G.Don	<i>Pinaceae</i>	Himalayan Cedar, <i>Deodar/ Devdar/ Devadar/ Devadaru</i> ,	Medicinal- Neurological disorders, asthma, fever and for infected wounds
<i>Ceratophyllum demersum</i> L.	<i>Ceratophyllaceae</i>	<i>Sevar</i> , <i>Kaayi</i> , <i>Sivar</i> , Hornwort, rigid hornwort, coontail, or coon's tail	Medicinal- Leaf juice is used to stop vomiting, as cooling agent
<i>Clematis grata</i> O. Hoffm. ex Baker	<i>Ranunculaceae</i>	<i>Dhanvali</i> , <i>Santai</i> , Charming Clematis	Medicinal- Rheumatism
<i>Cotoneaster microphyllus</i> Wall. ex. Lindl.	<i>Rosaceae</i>	<i>Bugarchilla</i> , <i>Wali</i>	Medicinal- wounds, Anti-inflammatory properties
<i>Cuscuta reflexa</i> Roxb.	<i>Convolvulaceae</i>	<i>Amar Bel</i> (Meaning, Immortal Vine)	Medicinal- Constipation, liver and spleen diseases, diarrhoea and inflammation.
<i>Cyperus rotundus</i> L.	<i>Cyperaceae</i>	Common Nut Sedge, <i>Motha</i>	Medicinal- Relieves fever, burning sensation and excess thirst, Improves lactation. Plant juice used to cure jaundice.
<i>Cynodon dactylon</i> L. Pers.	<i>Poaceae</i>	<i>Durva</i> , <i>Haritali</i> , <i>Dhub</i> , <i>Hariali</i>	Medicinal- Enhance immunity, cuts, wounds, piles, inflammation, skin diseases.

<i>Desmodium elegans</i> DC	<i>Fabaceae</i>	Tick-Trefoil, <i>Chamali</i>	Medicinal- Vomiting, antipyretic.
<i>Geranium sp.</i>	<i>Geraniaceae</i>	Cranesbill	Medicinal- anti-inflammatory, antiseptic, antibacterial, and anti-fungal
<i>Girardinia diversifolia</i> Link, Friis	<i>Urticaceae.</i>	Himalayan Nettle, <i>Bichchhoo</i>	Mats and rope, Medicinal- antidote against snakebites
<i>Heteropogon sp.</i>	<i>Poaceae</i>	Spear Grass	Forage and Fodder
<i>Hypericum oblongifolium</i> , Choisy	<i>Hypericaceae</i>	<i>Chitroi</i> , Pendant St Johns Wort	Medicinal- Pain, inflammation and pyrexia
<i>Juglans regia</i> L.	<i>Juglandaceae</i>	<i>Akhrot</i> , Walnut	Fruit edible, Medicinal- antiseptic, astringent, pyorrhoea.
<i>Lyonia ovalifolia</i> Wall Drude	<i>Ericaceae</i>	<i>Angeri</i>	Medicinal- Skin diseases and external parasites, pain.
<i>Myrica esculenta</i> Buch.- Ham. ex D.Don	<i>Myricaceae</i>	Box Myrtle, Bayberry, And <i>Kaphal</i> .	Edible fruit, Medicinal- cough, fever and asthma
<i>Myriophyllum spicatum</i> L.	<i>Haloragidaceae</i>	Watermilfoil	Medicinal- Demulcent and febrifuge
<i>Pimpinella diversifolia</i> DC.	<i>Apiaceae</i>	Groundsel And Old-Man-In-The-Spring, <i>Baeer</i>	Medicinal- abdominal disorders, leucorrhoea
<i>Polygonum amplexicaule</i> D. Don Greene	<i>Polygonaceae</i>	Knotweed, Knotgrass	Medicinal- Antioxidant, cure liver damage
<i>Potamogeton Perfoliatus</i> L.	<i>Potamogetonaceae</i>	Claspingleaf pondweed	-
<i>Potamogeton epihydrus</i> Raf.	<i>Potamogetonaceae</i>	Ribbon leaf pondweed	-
<i>Potentilla sp.</i>	<i>Rosaceae</i>	Tormentils, <i>Bajardantee</i>	Edible, Medicinal- anti-diarrhoeal, toothache
<i>Pyracantha crenulata</i> D. Don M. Roem.	<i>Rosaceae</i>	Himalayan Firethorn, <i>Chhota Seb</i>	Medicinal- Bloody dysentery
<i>Quercus floribunda</i> Lindl. ex A. Campus	<i>Fagaceae</i>	<i>Moru Oak</i>	Medicinal- Astringent
<i>Quercus leucotrichophora</i> A. Camus	<i>Fagaceae</i>	<i>Banjh</i> , Oak, Blackjack Oak	Medicinal- Astringent and diuretic properties
<i>Quercus semecarpifolia</i> Sm.	<i>Fagaceae</i>	<i>Kharsu</i> , brown oak	Timber, fuel, fodder
<i>Ranunculus sp</i>	<i>Ranunculaceae</i>	Butter Cup	Medicinal- Anti-rheumatism, intermittent fever and rubefacient
<i>Rhododendron arboreum</i> Sm.	<i>Ericaceae</i>	<i>Burans</i> , <i>Lal Buransh</i>	Fuel, Medicinal- Astringent and poultice, Coughs, diarrhoea and dysentery
<i>Rhus javanica</i> L. Merr	<i>Anacardiaceae</i>	<i>Tatri</i> , Nutgall Tree	Medicinal- Astringent, tannin
<i>Rubia manjith</i> Roxb.	<i>Rubiaceae</i>	<i>Manjith</i>	Medicinal- Febrifuge., astringent, diuretic, emmenagogue
<i>Rosa moschata</i> Herrm.	<i>Rosaceae</i>	The Musk Rose <i>Ban Gulab</i>	Medicinal- Eyes' disorders, diarrhoea, healing of wounds, stomach disorders
<i>Sarcococca saligna</i> D.Don Mull Arg	<i>Buxaceae</i>	The Sweet Box Or Christmas Box/ <i>Geru</i>	Medicinal- Antibacterial and antifungal property
<i>Solanum nigrum</i> L.	<i>Solanaceae</i>	<i>Makoi</i> , Black Nightshade	Medicinal- Skin and eye diseases, Liver diseases,
<i>Thalictrum foliolosum</i> DC.	<i>Ranunculaceae</i>	Gold Thread Root <i>Kirmuri</i>	Medicinal- Febrifuge, tonic
<i>Trapa natans</i> L.	<i>Trapaceae</i>	Water chestnut <i>Singhara</i>	Fodder, forage, Medicinal- rheumatism and sunburn
<i>Viola biflora</i> L.	<i>Violaceae</i>	<i>Saini</i>	Medicinal- Diaphoretic, intestinal pain.









**Figure-6:** Plant diversity found in the wetland Deoria Tal.

1. *Acer caesium* Wall. Ex Brandis, 2. *Aesculus indica* Wall. Ex Cambess Hook, 3. *Anaphalis* sp., 4. *Athyrium* sp., 5. *Berberis aristata* DC., 6. *Berberis asiatica* Roxb. ex DC 7. *Berberis lyceum* Royle., 8. *Cedrus deodara* Roxb. G.Don, 9. *Ceratophyllum demersum* L. 10. *Clematis grata* O. Hoffm. ex Baker, 11. *Cotoneaster microphyllus* Wall. Ex. Lindl., 12. *Cuscuta reflexa* Roxb., 13. *Cyperus rotundus* L., 14. *Cynodon dactylon* (L.) Pers. 15. *Desmodium elegans* DC, 16. *Geranium* sp., 17. *Girardinia diversifolia* (Link) Friis, 18. *Heteropogon* sp., 19. *Juglans regia* L., 20. *Hypericum oblongifolium* Choisy, 21. *Lyonia ovalifolia* (Wall) Drude, 22. *Myrica esculenta* Buch.-Ham. Ex D.Don, 23. *Myriophyllum spicatum* L, 24. *Pimpinella diversifolia* DC., 25. *Polygonum amplexicaule* (D.Don) Greene, 26. *Potamogeton Perfoliatus* L. 27. *Potamogeton epihydrous* raf. 28. *Potentilla* sp., 29. *Pyracantha crenulata* (D.Don) M. Roem., 30. *Quercus floribunda* Lindl. ex A. Campus, 31. *Quercus leucotrichophora* A. Camus, 32. *Quercus semecarpifolia* Sm., 33. *Ranunculus* sp., 34. *Rhododendron arboreum* Sm., 35. *Rhus javanica* (L.) Merr, 36. *Rubia manjith* Roxb., 37. *Rosa moschata* Herrm., 38. *Sarcococca saligna* (D. Don) Mul. Arg, 39. *Solanum nigrum* L., 40. *Thalictrum foliolosum* DC., 41. *Trapa natans* L., 42. *Viola* sp.

## Conclusion

The study on the mythological history and plant diversity of the Himalayan sacred wetland Deoria Tal is important for their sustainable management, utilization, and conservation point of view. The mythological *taboos*, practices and ethno medicinal values of the wetland help in maintaining the traditional beliefs and biodiversity.

As the Garhwal Himalayan wetlands are under the stress of various anthropogenic disturbances, it is recommended that regular documentation and inventory of useful plant species with their medicinal values should be done. The forest department and local people need to participate in collaboration for the long- term conservation and management of the wetland. The traditional practices of the himalayan people have always been a pioneer in conservation of natural resources. A regular monitoring of wetland ecosystem is required for effective conservation and management.

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