

Distribution patterns of diatoms in Doon Valley

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Doon, a unique synclinal valley is surrounded by the lesser Himalaya and Shivalik mountain ranges in Uttarakhand. The Ganga river basin drains the eastern extremity and the Yamuna river basin drains the western extreme of the valley. All water sources (streams, pools and springs) were sampled at different 30 stations during 2006-2008, regularly at monthly intervals. Diatom samples were collected from 3x3 cm² area of the benthic substrate (cobble, vegetation) cleaned with acid and mounted in Naphrax.

Overall, 358 diatom taxa are recorded for this valley comprising of various genus, species, subspecies and forms. 78 diatom taxa are observed as the dominant forms, based on the different habitats and ecological conditions prevailing in this valley. Diatom taxa such as *Navicula minuscula* var. *muralis*, *Navicula constans* var. *symmetrica*, *Navicula radiosa*, *Cyclotella meneghiniana*, *Gomphonema affine* var. *affine*, *Diatoma elongatum* var. *tenuis*, *Synedra inaequalis* var. *jumlensis* and *Amphora montana* have come up as the dominant taxa found only at one station or grid. *Navicula goeppertiana* var. *goeppertiana*, *Achnanthes gondwana*, *Achnanthes kryophila*, *Achnanthes exigua*, *Achnanthes heterovalvata*, *Cymatopleura amphicephala* are among those dominant forms found only in one basin. *Navicula phyllepta* is found abundant for main rivers and that too only during winters. *Navicula cryptotenella* as dominant taxa found throughout the valley but only in forest rich areas and with less disturbance.

The study also gives a brief idea of the distribution of dominant forms of diatoms with the context of habitat and other ecological conditions of this large valley.

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Impact of climate change on the biodiversity of Overa Aru sanctuary

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Climate change has already caused great impact on different ecosystems all over the globe. The increase in temperature has alerted the natural distribution of different species and change in seasons has been witnessed in temperate regions. It has been observed that different species are shifting towards different regions for their survival and sometimes they are not able to adopt in the new climate and if adopted may act in new competition with others. One of the most important hazards which impact on biodiversity is the change in the temperature of a particular region. It could impact not only biodiversity but also agricultural and human health, patterns of human settlement, energy use, transportation, industry, environmental quality, and other aspect of infrastructure that affect our quality of life. The avian population in state of disharmony with different types of ecosystems due to climate change and various anthropogenic activities that has also reduced the population in different habitats.

The Overa Aru wild life sanctuary is a great tourist attraction for religious, adventurous and wildlife tourism in Jammu and Kashmir (India). The overa Aru sanctuary is dominated by different species of birds, reptiles and mammals and is a home to large number of birds. In the present study checklists of avian fauna, their migratory status, feeding habits, abundance and status, and site wise population have been documented. However, the Sanctuary is currently in a state of great stress as most of the avian population is dwindling from the sanctuary and there is consensus among the scientific community that the cause may be due to change in the climate of the area. It needs to be documented out that how much impact is on the sanctuary due to climate change.

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