

# Parvati Kunda Wetland: threatened or thriving?

By Jessie Moravek. Published in Jottings on 09 June 2019



Three hundred meters above the village of Gatlang in Rasuwa, Nepal, Parvati Kunda sits like a jewel in the forest. Situated at 2,600m, the small wetland is not only a reservoir of biodiversity but also a major source of water for 400 households in Gatlang Village and a religious site that draws hundreds of visitors to festivals each year <sup>1</sup>.

Parvati Kunda, however, faces many threats. Climate change could alter the rhythms of rain and snowfall and jeopardize sensitive wetland habitats <sup>2-5</sup>. Additionally, pollution from manure and fertilizers can cause certain plants to grow too fast, crowding out other species <sup>6-9</sup>. Such pollution could also contaminate the wetland with bacteria, making the water unhealthy to drink for people in the village.

Given all these threats, it is important to understand the plants and animals that live in Parvati Kunda now so that we can predict how the ecosystem may change in the future. This knowledge will help us protect Parvati Kunda and the species that live there for many years to come.

Aquatic insects are one of the best ways to tell if a wetland is polluted or clean. Certain insect species are extra-sensitive to pollution and can only be found in very clean wetlands. The absence of these sensitive species can suggest that a wetland is polluted <sup>10</sup>. When aquatic insects were surveyed in Parvati Kunda, very few sensitive species were found—suggesting that the water in Parvati Kunda is already quite polluted.



*Parvati Kunda Wetland in spring. © Jessie A. Moravek.*

This pollution probably comes from livestock waste in the area surrounding the wetland but exactly where, when, and how much pollution comes from livestock is uncertain. And, although we do not fully understand what problems pollution will cause for plants and animals in Parvati Kunda, it is clearly a major threat to the wetland and the people that drink the water.

It is important to keep the wetland clean to protect the species that live there and the people living in the nearby Gatlang Village. Even with polluted water, there are currently 25 species of wetland plants in Parvati Kunda, including *Acorus calamus* and a rare type of peat moss called *Sphagnum palustre*. Around the wetland, we observed 37 different types of birds and six different species of mammals including Grey Langur monkeys, Barking Deer, and Yellow-throated Martens. The water from Parvati Kunda is also piped down to village taps, although the water in those taps is contaminated with bacteria <sup>11</sup>.

Overall, it is important to continue surveying the plants and animals in Parvati Kunda. Now that the wetland species have been recorded once, it will be easy to monitor how pollution and climate change impact the wetland habitat in the future. It will also be easy to measure how local conservation actions help protect wetland species. Parvati Kunda is a beautiful example of a Himalayan wetland and understanding Parvati Kunda will help us protect and conserve other wetlands throughout the region.



*School children from Gatlang enjoy learning about Parvati Kunda Wetland's biodiversity during an educational program. © Mohan B. Shrestha.*

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This science communication was originally published as an article in JoTT at <https://doi.org/10.11609/jott.4481.11.6.13734-13747>.

This jotting was originally published in *Jottings* at <https://threatenedtaxa.org/jottings/ecology/parvati-kunda-wetland-threatened-or-thriving/>.