

PEATLANDS OF INDIA

Storing Carbon.
Sustaining Life.
Securing Tomorrow.

Peatlands are wetland areas characterised by the accumulation of organic matter over centuries. They mainly consist of partially decomposed plant material in waterlogged conditions, leading to peat formation. They are among the earth's most efficient carbon sinks, storing carbon at a rate far greater than forests and oceans.

PEATLANDS COVER NEARLY

3%

OF THE EARTH'S LAND AREA,
BUT STORE APPROXIMATELY,

30%

OF LAND-BASED CARBON

Tso Kar Wetland complex, Ladakh



giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

Supported by:



on the basis of a decision
by the German Bundestag



Many of these peatlands, located in the upper reaches of the river basin or watersheds, play an important role in regulating hydrological regimes. These peatlands are also crucial habitats for regional biodiversity and migratory waterbirds, and important hotspots for cultural values including tourism and religious values.



Culturally significant Khecheopalri Lake



Habitat for rare and threatened species, Tso Kar Wetland

Peatlands store significant amounts of terrestrial carbon, playing a key role in nature-based climate change mitigation. Assessment findings show that the Himalayas exhibit highest median carbon stock of 92.5 tonnes per hectare, nearly one and a half times greater than Trans-Himalayas and the Northeast, highlighting their importance as a major carbon sink. High Soil Organic Carbon percentage (SOC%) was observed in the Tso Kar Wetland Complex, Ladakh, where it ranged from 7 - 31% for peat depths up to 30 cm; while at Chandertal in Himachal Pradesh, it varied between 11% and 21% for peat depths up to 20 cm. In Jammu and Kashmir, peat depths at Mirgund and Hokersar ranged from 0.8 to 4 m, with SOC% between 19% and 42%.



Peat sampling at Tso Kar wetland complex



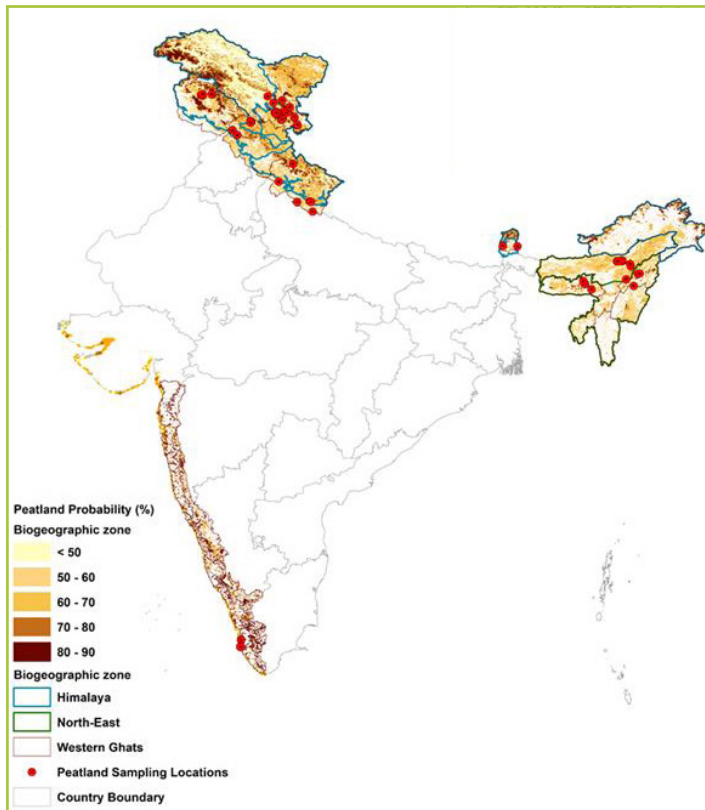
Peat sample at Hokersar wetland site



PEAT STRATA ARE IMPORTANT ARCHIVES OF PAST HUMAN ACTIVITIES AND THE ENVIRONMENT.

Peatland probability map for India

Disclaimer: The geographical map is for informational purposes only and does not constitute recognition of international boundaries or regions. IZ makes no claim concerning the validity, accuracy or completeness of the maps nor assumes any liability resulting from the use of the information therein. The probable peatland extent for Western Ghats will be updated based on the ongoing field assessment.



Dzukou Valley, Nagaland



Tso Kar wetland complex, Ladakh



Khecheopalri Lake, Sikkim



Changthang Valley wetland complex, Jammu & Kashmir



Marshes of Munnar

The probable peatland extent in Indian Himalayas is nearly 260,000 hectares, 0.4% of the total geographical area. Most of the probable peatland areas are concentrated in mid- to high-altitude regions, ranging from 1,500 to 4,500 metres, predominantly within rangelands and wetlands. Some of the notable peatland sites are Tso Kar, Hanle and Chushul Marshes in Ladakh; Chandertal and Miyar valley wetlands in Himachal Pradesh; Saattal in Uttarakhand; and Khecheopalri in Sikkim. These temperate peatlands are dominated by moss and sedges and have varied soil carbon content and peat depth. In the Western Ghats biogeographic zone, peatland probability area covers about 0.4% of the entire region.

THREATS TO PEATLANDS

Peatland drained for agriculture in Ziro valley, Arunachal Pradesh



Disturbed flow regime in Hanle Marshes, Ladakh



NEARLY 65 MILLION HA OF THE GLOBAL PEATLAND AREA ARE DEGRADED, LARGELY AS A RESULT OF DRAINAGE.



Peatlands reclaimed for housing in Haiderpura, Kashmir



Tourist huts abutting peatlands in Chandertal, Himachal Pradesh

NEED FOR ACTION

The lack of awareness about peatlands has resulted in widespread degradation and loss across many landscapes. Activities such as changes in hydrological regimes for agriculture, dredging, unsustainable harvesting, and overgrazing are severely impacting the integrity and productivity of these vital ecosystems. To address these challenges, a dedicated framework and strategy for the conservation, restoration, and sustainable management of peatlands is essential, ensuring the following outcomes:

- Peatlands are scientifically assessed and regularly monitored for their condition and extent.
- Intact peatlands are protected and managed to preserve carbon stocks and peat-forming conditions.
- Capacity development, research, and partnerships support peatland conservation and are integrated into relevant sectoral plans and investments.
- Dedicated resources are allocated for the conservation, restoration, and sustainable management of peatlands.

This brochure is a part of 'Indo-German Support Project for Climate Action in India', implemented by GIZ in partnership with Ministry of Environment, Forest and Climate Change under the International Climate Initiative (IKI). The peatland inventory and assessment initiative is executed by GIZ in collaboration with Wetlands International South Asia and Wetlands International, Netherlands.

Published by: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Registered offices in Bonn and Eschborn, Germany.

Indo-German Support Project for Climate Action in India
A-2/18, Safdarjung Enclave,
New Delhi-110029, India
T: +91 11 4949 5353
E: biodiv.india@giz.de
W: www.giz.de/india

Photo Credits: GIZ/Purva Shah

WISA/Dhruv Verma, Harsh Ganapathi, Apoorva Thapa, Arif Ahmad

Designed by: GIZ/Mitansh Dawda, Purva Shah, Avantika Bhaskar

GIZ is responsible for the content of this publication.

Responsible: Mr Ravindra Singh, Director,
Indo-German Biodiversity Programme

On behalf of: International Climate Initiative of the German Federal Government

As at: January 2025