

# Distribution of Gymnosperms in India

Gymnosperms are a group of seed plants that produce naked seeds, not enclosed in an ovary. They are an important Division of the Plant Kingdom and are distributed across India in diverse habitats.

Distribution of Gymnosperms in India: - India is home to Cycads, Conifers, and Gnetales. - Found in Himalayas, Western Ghats, Eastern Ghats, and Northeastern states. - Estimated ~80 Conifer species, ~20 Cycad species, and few Gnetales species.

Cycads in India: - Oldest seed plants, many are living fossils. - Found mainly in tropical and subtropical regions (Western Ghats, NE India, Andaman & Nicobar). - Examples: *Cycas beddomei*, *C. rumphii*, *C. circinalis*.

Conifers in India: - Dominant Gymnosperms with needle-like leaves and cone-shaped growth. - Adapted to cold, high-altitude conditions. - Major regions: Himalayas, Northwestern deserts, Western Ghats. - Species: *Pinus wallichiana*, *P. roxburghii*, *P. gerardiana*, *Abies spectabilis*, *Cedrus deodara*, *Picea smithiana*.

Gnetales in India: - Unique group with Angiosperm-like traits and xylem vessels. - Represented by two genera: *Gnetum* and *Ephedra*. - Species: *Gnetum gnemon*, *G. montanum* (NE India); *Ephedra gerardiana* (Sikkim).

Summary: Gymnosperms in India show wide ecological distribution from tropical forests to alpine meadows. They contribute significantly to biodiversity and ecosystems.