

## Light Pollution in Atacama Desert

*Prelims: Current events of national & international importance | Ecology & Environment  
| Geography*

### Why in News?

*Light pollution threatens the Atacama's clear skies, which have supported major astronomical projects such as the Extremely Large Telescope.*

- **Light pollution** - It is the excessive, misdirected, or inappropriate use of artificial light, disrupting natural night environments and causing sky glow.
- **Atacama Desert** - It is located in northern Chile, stretching approximately 1,600 km along the Pacific coast.
- **Boundaries** - Pacific Ocean & Coastal Range (west), Andes Mountains (East), Peru (North), Chilean Matorral region (South).
- **Uniqueness** - It is the driest nonpolar desert on Earth, with some areas having no recorded rainfall due to the rain shadow region in the Andes Mountains.
- Famous for its Mars-like landscapes, salt flats, volcanoes, and some of the clearest night skies on Earth.
- **Stargazing Paradise** - Due to its high altitude, clear skies, and nearly zero light pollution, it is home to some of the world's most powerful observatories.

### Why the Atacama Desert Matters?

- **Unique conditions** - A rare combination of *dry climate, high altitude* (3,000+ m), and *isolation from urban light pollution* provides 300+ clear nights per year.
- **Global hub** - It acts as an unrivalled hub for *world-class astronomy & home to the world's largest ground-based astronomical projects*.
- Hosts several world-class observatories, such as the Paranal Observatory, forthcoming Extremely Large Telescope (ELT).
  - **Paranal Observatory** operated by the European Southern Observatory (ESO).

**Photon Valley Corridor** - *A high-altitude corridor in Chile, where several observatories operate side by side using some of the most sophisticated instruments ever engineered, where ESO's telescopes are among the most powerful globally.*

- **Scientific importance** - It enables research into the origins of the universe, with visibility sharper than NASA's Hubble.

- **Emerging Threats**
- **Urban & industrial growth** - Mining, wind farms, and sprawl increase artificial light.
- **Energy projects** - A proposed green power complex near Paranal Observatory was cancelled in Jan 2026 after astronomers appealed.
- **Regulatory gaps** - Existing sky-preservation laws are outdated and unclear, prompting Chile's science ministry to review environmental regulations.

## Reference

[The Hindu | Light pollution in the Atacama Desert](#)

