TRAIL GUARD AI: ENVIRONMENT

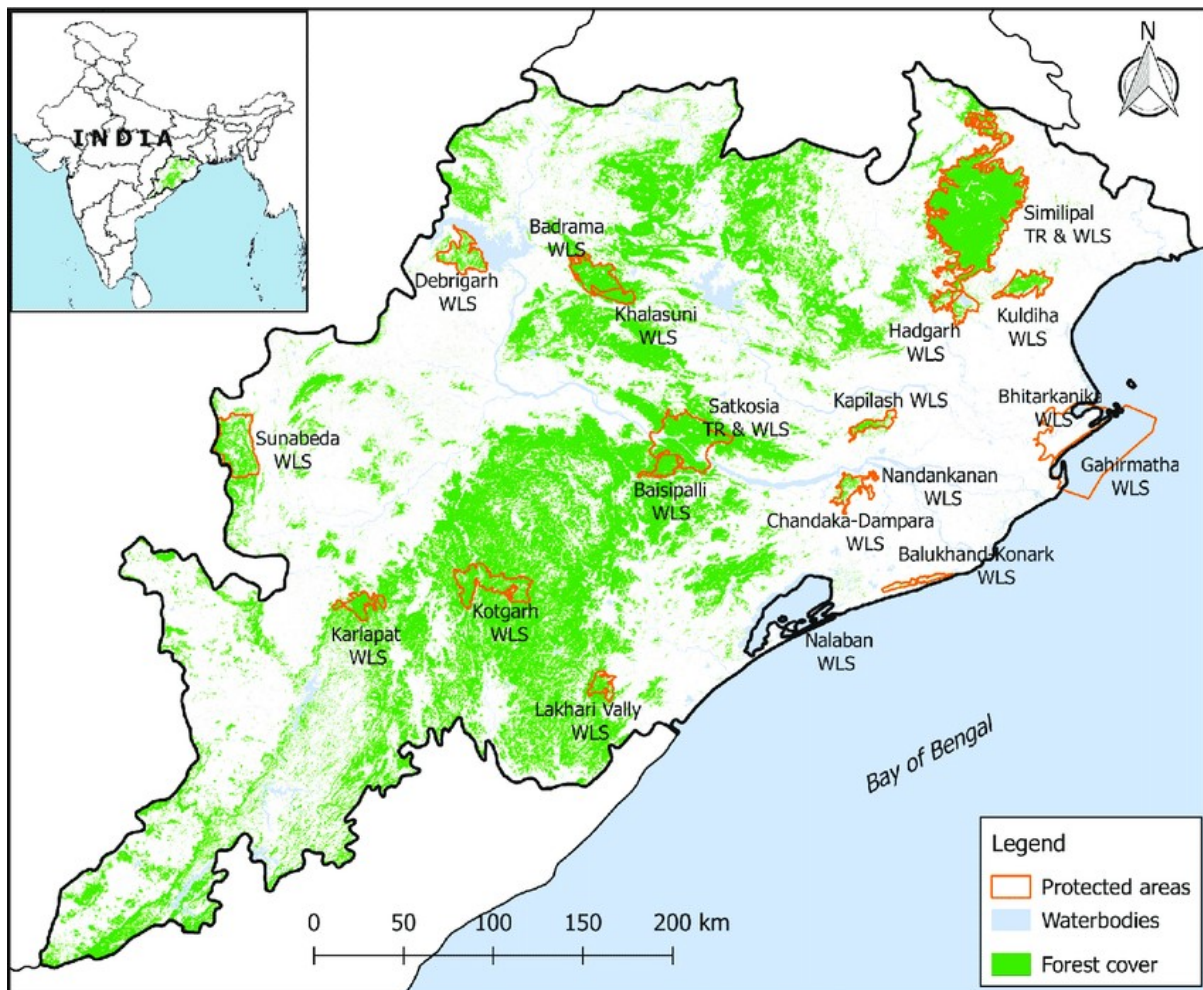**NEWS:** *AI-fit cameras in Similipal Tiger Reserve send poaching plummeting*

WHAT'S IN THE NEWS?

TrailGuard AI, developed by Nightjar Technologies, has significantly enhanced poaching detection at Similipal Tiger Reserve, Odisha, leading to the arrest of 96 poachers and seizure of 86 firearms, thereby strengthening wildlife conservation efforts.

Detailed Analysis with Elaborated Pointers:

TrailGuard AI: Technological Advancement in Wildlife Conservation

- **Development and Purpose**: Developed by Nightjar Technologies based in Gurgaon, TrailGuard AI serves as an AI-powered camera-based alert system designed to enhance wildlife conservation and ensure human-wildlife coexistence in remote regions.
- **System Components**:
  - **Camera Unit**: Small in size, comparable to a pen, facilitating easy concealment.
  - **Battery/Communication Unit**: Similar in size to a notepad, equipped for long-term deployment.
  - **Connection**: A two-meter long cable connects both units, optimizing spatial configuration for environmental monitoring.
- **Key Features**:
  - **Compact Design**: Designed to be unobtrusive, easily camouflaged within natural surroundings.
  - **Embedded Artificial Intelligence**: Equipped with AI to process images on-site, accurately identifying humans, vehicles, and wildlife.
  - **Real-Time Alerts**: Capable of transmitting alerts within 30 seconds via GSM, long-range radio, or satellite, enabling prompt response from conservation authorities.
  - **Extended Battery Life**: Operates up to six months without maintenance, minimizing human disturbance in sensitive ecological areas.
- **Versatility in Application**:
  - Beyond wildlife monitoring, TrailGuard AI is applicable in scenarios like illegal logging detection, mine security, border security, and building intrusion monitoring.

Similipal Tiger Reserve: A Critical Ecosystem

- **Geographical and Ecological Context**:
    - Located in Mayurbhanj District, Odisha, forming part of the larger Mayurbhanj Elephant Reserve which also includes Hadgarh and Kuldiha Wildlife Sanctuaries.
    - Characterized by high plateaus and the prominent twin peaks of Kiriburu and Meghashini.
- **UNESCO Recognition**:
    - Recognized as part of the UNESCO World Network of Biosphere Reserves since 2009, highlighting its global ecological significance.
- **Biodiversity and Conservation Status**:
    - Home to unique wildlife including the Melanistic Royal Bengal Tiger, Asian elephants, and other endangered species.
    - Encompasses a transitional area of 2250 sq. km, providing a substantial habitat for various fauna.
- **Hydrological Features**:
    - Enriched by rivers like Budhabalanga and Salandi, and tributaries of the Baitarani, which are crucial for the ecosystem's health and biodiversity.
- **Cultural and Social Aspects**:

- Surrounding areas are inhabited by diverse tribal communities such as the Kolha, Santhala, and Gondas, whose lifestyle and culture are intertwined with the forest environment.

Source: https://www.thehindu.com/sci-tech/energy-and-environment/ai-fit-cameras-in-similipal-tiger-reserve-send-poaching-plummeting/article69225924.ece