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Wildlife Observatory of Australia (WildObs): First National Infrastructure for Automated Wildlife Image Analysis

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The Wildlife Observatory of Australia (WildObs) is building the Australia's first national infrastructure dedicated to automated wildlife image analysis. Designed to process large volumes of camera trap data using artificial intelligence, WildObs provides the tools and infrastructure necessary to support scalable, standardised, and reproducible biodiversity monitoring across Australia's varied ecosystems. Camera traps are widely used across research institutions, government agencies, and conservation groups to monitor wildlife presence and behaviour. However, processing this data manually is labour-intensive and often inconsistent, limiting the utility of these datasets for broad-scale or repeatable analysis. WildObs addresses this challenge by applying advanced computer vision models to automate species identification from images, reducing bottlenecks in data processing and improving accuracy, consistency, and speed. The platform leverages cloud computing and reusable AI model pipelines to support the high-throughput processing of images at local, regional, and national scales.

WildObs also plays a critical role in connecting wildlife observation data with other national infrastructures. It is designed to integrate with repositories like the Terrestrial Ecosystem Research Infrastructure (TERN), the Atlas of Living Australia (ALA) and analytical platforms such as EcoCommons, allowing seamless flow from image capture to species detection, and onward to modelling and decision support. This end-to-end interoperability enables researchers and policymakers to derive greater value from ecological data, supporting initiatives like the Threatened Species Index and national reporting. Importantly, WildObs is a collaborative infrastructure that serves the broader environmental community. By engaging research institutions, conservation NGOs, Indigenous rangers, and land managers, the initiative promotes knowledge-sharing and encourages participation in the co-development of training datasets and detection models. Its open and extensible design supports customisation to regional contexts and species groups, enhancing its relevance and scalability.

WildObs is a foundational infrastructure that transforms fragmented and underutilised image data into a national resource for science and policy. It improves the visibility, usability, and consistency of wildlife data across jurisdictions, enabling evidence-based decisions in biodiversity conservation and land management. By connecting on-ground monitoring efforts with digital analysis pipelines and national-scale reporting, WildObs exemplifies the kind of research infrastructure needed to support data-intensive science—locally and globally. It represents a significant step forward in the use of AI and interoperable systems for environmental resilience and ecological knowledge generation.

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