



SCALING WETLAND PROTECTION AMIDST REGULATORY UNCERTAINTY

Solution Brief: Planet and Skytec®

THE HIGH STAKES OF UNMONITORED WATERS

In 2023, the Supreme Court decided in *Sackett v. EPA* that the burden of protecting the waters of the United States should be shifted to state agencies. These agencies are now expected to maintain conservation standards while operating with diminished budgets and headcounts.

Most agencies rely on dated National Wetland Inventory (NWI) maps and intermittent field visits. This strategy creates a dangerous latency trap. By the time an illegal fill event or hydrological shift is detected during a biannual inspection, the damage is often irreversible. With wetland loss carrying an average cost of \$1 million per acre in lost flood mitigation value, long gaps between observations are no longer defensible. Relying on static maps isn't just an ecological risk; it's an unmanaged infrastructure liability.

To close this gap, agencies must shift from reactive snapshots to a daily operational baseline. By connecting advanced machine learning with Planet near-daily satellite imagery, Skytec's GeoAI wetlands monitoring solution empowers state agencies, landowners, and developers to move from scouting to targeted enforcement. Limited field resources are then deployed only where a verified change occurs, transforming agency departments from a reactive cost center into a proactive guardian of state natural capital.

ABOUT SKYTEC

Skytec is a geospatial and environmental intelligence firm helping organizations see, understand, and act on what's happening across the landscapes they manage. Since 2015, Skytec has delivered advanced GIS, remote sensing, and GeoAI solutions to clients in natural resources, state agencies, nonprofits, and more. Skytec's Ranger® platform is a satellite-based change detection platform, delivering continuous monitoring, early alerts, and actionable intelligence through ArcGIS.

To learn more, visit skytecllc.com or connect on [LinkedIn](#).

ABOUT PLANET

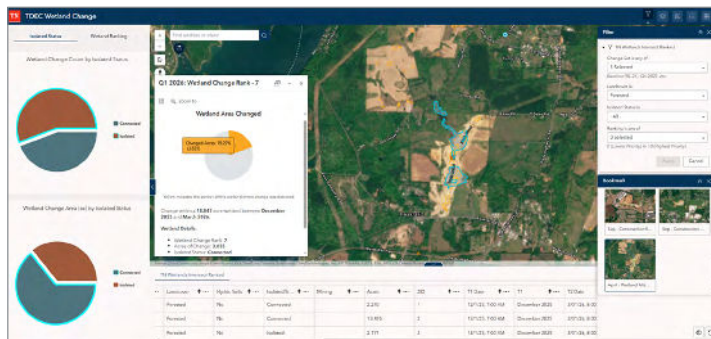
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GEOAI FOR REAL-TIME WETLAND COMPLIANCE AND CONSERVATION

Skytec's GeoAI-based wetland monitoring solution, powered by PlanetScope®, integrates statewide predictive mapping with continuous change detection. This partnership delivers a scalable, high-frequency remote monitoring tool that eliminates the need for manual field inspections, allowing states to modernize their inventories in months rather than years.

The solution leverages Planet Normalized Surface Reflectance Mosaics to provide a consistent, statewide view of critical ecosystems. By combining PlanetScope high-cadence imagery with LiDAR-derived elevation data and Microsoft's Planetary Computer APIs, Skytec's deep learning models identify potential wetlands that traditional inventories may miss.



VISUALIZE AND PREDICT

Using an enhanced **Esri Arc Hydro Wetland Identification Model (WIM)**, Skytec processes approximately 75,500 acres of curated training data to teach the system to recognize wetland features. This allows agencies to explore predictive outputs across millions of acres via an intuitive interface.

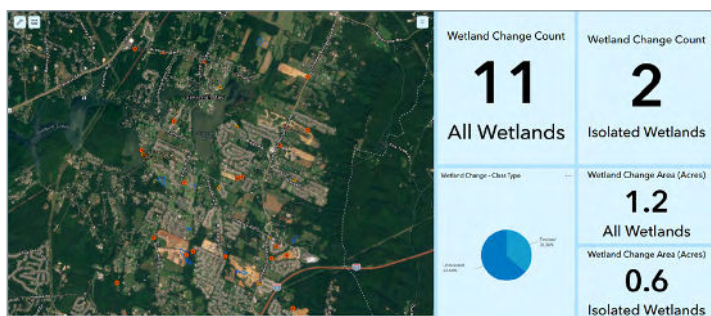
LEFT: Quarterly wetland change monitoring application powered by Planet



MONITOR WITH RANGER®

Once potential wetlands are mapped, **Skytec's Ranger® platform** uses Planet imagery to monitor for change events. The system automatically alerts regulators to land clearing, drainage, or construction occurring on or near predicted wetlands.

LEFT: Skytec's Ranger platform



OPTIMIZE REGULATORY REVIEW

The tool streamlines environmental planning and due diligence. Field regulators use the desktop review to prioritize high-risk sites, significantly reducing travel time and operational costs while ensuring site suitability for development projects.

LEFT: Wetland monitoring dashboard

This approach transforms how states manage natural capital. By replacing static, 50-year-old maps with dynamic, satellite-driven insights, agencies can finally close the compliance gap. The result is a more efficient permitting process for developers and a robust defense of the ecosystems that protect state infrastructure from multimillion-dollar flood events.

CONTACT US

Ready to close the compliance gap and protect your state's natural capital? Contact us today at wetlands@planet.com to learn how GeoAI minimizes liability.