# Smart Skies, Healthy Waters wins £42 million boost to revolutionise UK water quality monitoring



A world-first initiative, "Smart Skies, Healthy Waters," has achieved recognition as a winner in the fifth Water Breakthrough Challenge, an event organised by the Ofwat Innovation Fund. This innovative project, a collaborative effort among Northumbrian Water, Makutu, Skyports Drone Services, Newcastle University, and Proteus Instruments, aims to transform the methods of water quality monitoring in the UK by utilising automated drones and advanced data analytics.

Over a decade, the Ofwat Innovation Fund is allocating £600 million to foster innovative projects that address environmental, societal, and customer-oriented challenges within the water sector. This year's challenge has awarded over £42 million to 16 pioneering projects, with "Smart Skies, Healthy Waters" highlighted as a standout initiative.

Traditional techniques for assessing water quality have become antiquated, often relying on labour-intensive and infrequent manual sampling—methods that also pose safety risks, particularly in remote or deep-water areas. In response to these challenges, the Smart Skies project proposes a cutting-edge approach, employing a suite of automated drones equipped with sensors and cloud-based analytics to deliver near real-time insights into coastal water health. This system enables water companies and the public to access critical data promptly, thereby empowering communities to make informed decisions regarding water safety.

The technology is designed to operate from strategically positioned "lab in a box" locations, allowing for immediate analysis of water samples. Given that results will be almost instantaneously available, this initiative not only enhances operational efficiency but also contributes to greater ecological awareness among coastal visitors.

Makutu's expertise in cloud-native data platforms, artificial intelligence, and the Internet of Things underpins this project, transforming raw sensor data into actionable insights for both decision-makers and the public. Meanwhile, Skyports, noted for its proficiency in drone operations in challenging environments, provides the operational framework necessary to stabilise drone technology in water sampling tasks, offering a safer and more efficient alternative to traditional methods.

Commenting on the significance of this project, Richard Warneford, Head of Wastewater at Northumbrian Water, remarked on its groundbreaking potential to harness emerging technologies: “This project provides a ground-breaking opportunity to harness new technologies to enable more frequent monitoring of our bathing waters.” He stated it would mark a transformative step for the sector, ensuring healthier outcomes for communities and the environment.

Echoing this sentiment, James Sumsion, CEO of Makutu, underscored the real-world impact of such innovations, asserting that the initiative embodies "how innovative thinking can tackle real-world challenges," specifically regarding the delivery of coastal water quality data directly to the public. This project, he claims, not only enhances operational effectiveness but also fosters a drive for environmental sustainability on a global scale.

Alex Brown, Director of Drone Services at Skyports, emphasised the critical role of drone technology in improving water quality monitoring, asserting that it allows for access to areas that traditional sampling methods cannot reach. He envisions a future where a vast network of water monitoring drones will operate beyond visual line of sight, continuously providing vital data to water utilities, thus promoting proactive measures to maintain clean waterways.

David Black, CEO of Ofwat, reflected on the essential nature of water in society, highlighting the myriad challenges faced by the water sector and the need for transformative solutions. He expressed pride in the innovative ambition demonstrated by this year’s winners, reinforcing the essential role that these projects play in ensuring a sustainable future for water management. The Ofwat Innovation Fund’s collaborative approach aims to not only resolve immediate challenges but also to establish scalable solutions that can enhance water sectors nationally and globally.

As the water sector grapples with pressing challenges necessitating urgent action, "Smart Skies, Healthy Waters" stands poised to redefine water quality monitoring, offering a beacon of innovation at a crucial time for environmental stewardship.

### Reference Map

1. Paragraphs 1, 2
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6. Paragraph 7
7. Paragraph 8

Source: [Noah Wire Services](https://www.noahwire.com)

## Bibliography

1. <https://www.suasnews.com/2025/05/smart-skies-healthy-waters-named-a-winner-of-the-fifth-water-breakthrough-challenge/> - Please view link - unable to able to access data
2. <https://www.suasnews.com/2025/05/smart-skies-healthy-waters-named-a-winner-of-the-fifth-water-breakthrough-challenge/> - The article announces that 'Smart Skies, Healthy Waters' has been named a winner of the fifth Water Breakthrough Challenge by the Ofwat Innovation Fund. The project is a collaboration between Northumbrian Water, Makutu, Skyports Drone Services, Newcastle University, and Proteus Instruments. It aims to revolutionize water quality monitoring by using automated drones and real-time data analytics to provide near real-time insights into the health of coastal waters. The initiative seeks to transform how the water sector manages resources, responds to risks, and serves communities.
3. <https://www.nwg.co.uk/news-and-media/news-releases/worlds-first-drone-water-quality-study-announced-by-northumbrian-water/> - Northumbrian Water has partnered with cloud data experts Makutu to explore the use of drones for routine water quality assessments. This collaboration marks a world-first in the industry, aiming to utilize unmanned aerial vehicles (UAVs) equipped with sensors, AI, and data analytics to monitor key coastal and inland locations. The initiative seeks to overcome challenges associated with manual water sampling, especially in remote or adverse conditions, by providing near real-time data to inform decision-making.
4. <https://www.nwg.co.uk/news-and-media/news-releases/eyes-to-the-skies-as-northumbrian-water-begins-water-quality-drone-test-flights/> - Northumbrian Water has successfully conducted the maiden test flight of a drone designed to improve the quality of the North East’s rivers and coastal waters. In collaboration with Makutu and Skyports Drone Services, the project explores the use of drone technology for real-time water quality assessments. The drones are equipped with sensors to collect water samples, transmitting data back to Northumbrian Water for analysis. This approach aims to enhance monitoring efficiency and response times, contributing to cleaner rivers and beaches.
5. <https://www.suasnews.com/2024/01/skyports-drone-services-and-makutu-launch-water-quality-drone-flights-with-northumbrian-water/> - Skyports Drone Services and Makutu have successfully completed maiden test flights for a new drone inspection service aimed at helping water companies monitor and improve the quality of river and coastal waters. The service combines Skyports' drone operations and winch technology with Makutu's water testing solution. The test flights demonstrate how beyond visual line of sight (BVLOS) electric drone operations can automate water quality surveys, improving access to hard-to-reach areas, reducing carbon footprint, and gathering more data over larger areas faster.
6. <https://www.waterindustryjournal.co.uk/water-quality-drone-maiden-flights-hailed-a-success> - A new drone inspection service has been hailed a success in helping water companies monitor and improve the quality of river and coastal waters. Northumbrian Water participated in a pilot study using test flights to demonstrate how beyond visual line of sight (BVLOS) electric drone operations can automate water quality surveys. The technology helps gain access to hard-to-reach areas, reduces carbon emissions, gathers more data over a larger area, and obtains results much faster, providing an alternative to current labor-intensive data collection processes.
7. <https://dronelife.com/2024/01/15/skyports-drone-services-and-makutu-transform-water-quality-monitoring-with-pioneering-drone-flights/> - Skyports Drone Services and Makutu have successfully conducted maiden test flights for a revolutionary drone inspection service designed to enhance water quality monitoring for river and coastal waters. This collaboration, in partnership with UK water supplier Northumbrian Water, combines Skyports' expertise in remote drone operations and winch technology with Makutu's advanced water testing solutions. The service utilizes beyond visual line of sight (BVLOS) electric drone operations to automate water quality surveys, offering improved access to challenging locations, reduced carbon footprint, and faster data collection over larger areas.