Remote solutions for remote locations:
A rural NFM monitoring framework for HMH's

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PhD Title: "*A large-scale hydrodynamic flood modelling approach to explore nature-based solutions for catchment-based flood management*"

Remote Challenges

No internationally recognised standard methodologies to monitor NbS implemented against HMHs

Data in remote regions or low-income settings can be poor, particularly in highly vegetated or mountain areas

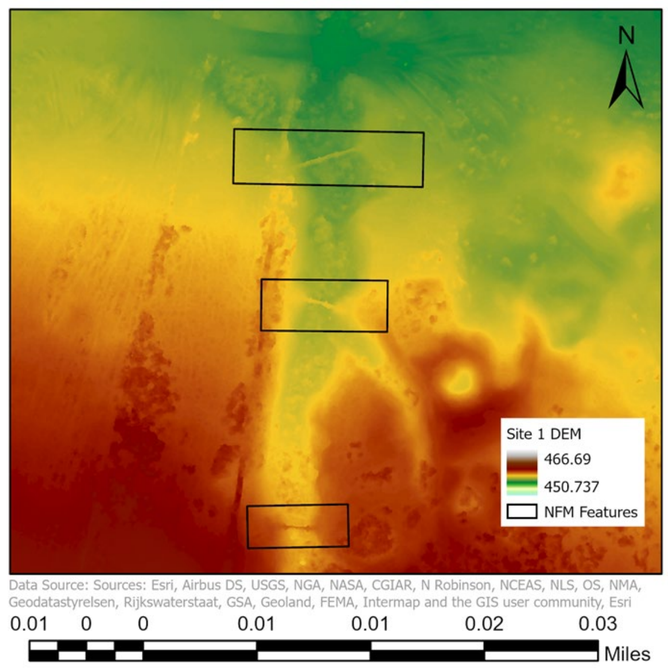
NbS features or site scale NbS opportunities are **small (<1m)** and are challenging to monitor

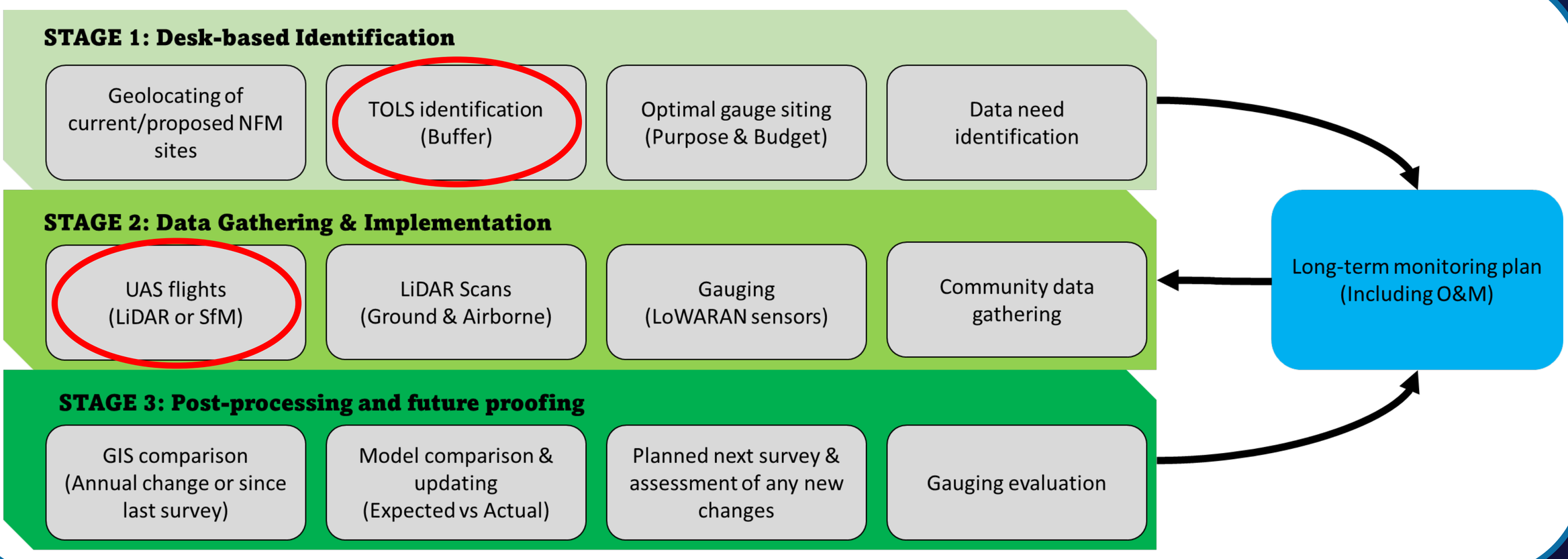
This work aims to explore methods to tackle data scarcity, and propose a monitoring framework for these areas

Remote Solutions

UAV photogrammetry and handheld LiDAR provide a method for gathering high-resolution data (<50mm)

Photogrammetry and LiDAR effectively picked up accurate; elevation, tractor tracks, and NbS features on-site.





Optimisation

Take-off and landing zone buffers would allow multiple sites to be serviced in one

Integrating this framework into my PhD will provide me with improved methods for collecting data in remote areas

Conclusions

UAV surveys combined with other monitoring methods can produce high-resolution (<50mm) DEM data

LoWARAN networks and community science combined with these survey methods, highlights a potential holistic HMHs monitoring framework

GIS and re-evaluation could optimise monitoring plans

Future Research:
While these methods were employed in the UK, they are yet to be employed in low- middle- income settings

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