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## Creating a spatially explicit road-river infrastructure dataset to benefit people and nature

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Worldwide, roads cross most rivers big and small, but if nobody maps the locations, do they exist? In our experiences, the answer is no, and structures such as culverts and bridges at these road-river crossings have gone overlooked in research into the impacts that infrastructure can have on rivers and the species that depend on them. There remains a need for spatially explicit data for road-river crossings as well as identification of structure types to support research and monitoring that guides more proactive approaches to infrastructure management. Our initial focus was on mapping road-river structures in Wales, United Kingdom so to better understand how these could be impacting on nature, particularly migratory fishes. However, as we began developing the spatial dataset, we became aware of broader applications, including relevance to hazard management and movement of people and goods so to support livelihoods and well-being. In this talk, I will discuss our initial approach to tackling this problem in Wales, and how we learned from that experience and refined the approach for mapping in England, including our use of openly available remotely sensed imagery from Google and Ordnance Survey so to ensure the data can be reused and modified by others for their needs and uses. I will present a spatially explicit dataset of road-river structures in Wales, including information about surrounding environmental attributes and discuss how these can help us to better understand infrastructure vulnerability and patterns at catchment and landscape scales. I will discuss the potential for diverse applications of this road-river structure dataset, particularly in relation to supporting real-time monitoring and providing the baseline data needed for any future machine learning or computation modelling advances for monitoring road-river structures.