

Life and deprecation: what happens to digital maps in the long-term?

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Abstract:

When Adobe Flash was deprecated in 2020, many digital maps were lost with it. While digital mapping has many benefits—namely the ease of maintenance and (re)publication—the death of Flash highlighted the often precarious nature of digital mapping projects, particularly when they are tied to proprietary software. Extrapolating from this event, I ask: what happens to digital mapping projects in the long-term? What happens to projects that lose funding or key personnel? Are they destined to collect dust on a forgotten server, until they are quietly, unceremoniously taken offline? What happens when major technical updates are required to keep a resource-strapped project online? And what about the physical infrastructure required to host and support digital maps, often energy and land intensive? These are all questions of digital sustainability, the process by which the creation and use of digital information is supported in the long-term—considering both the physical information infrastructure and the social ecosystem in which information is produced (Stuermer et al. 2017). Digital sustainability and long-term maintenance are currently spaces of silence within cartography, with no mention of either in the *GIS&T Body of Knowledge* guide to cartographic production (Buckingham 2018), nor recent GIS textbook chapters about project management (Campbell and Shin 2011, McHaffie 2023), nor web mapping textbooks (Dorman 2020). As digital maps grow in size and frequency, and as cartography grapples with its environmental impact, pushing towards decarbonization (Wu et al. 2024), these questions of digital sustainability grow only more urgent.

In this presentation, I describe the challenges to digital sustainability faced by mapping projects, and how related disciplines, such as digital humanities and data science, offer useful frameworks and examples. Digital humanities provides insight into both project maintenance planning (Maron and Pickle 2014, Smithies et al. 2019, Edmond and Morselli 2020, Kräutli et al. 2021, Schlotterback et al. 2022)—including when projects should be taken offline—and minimal technical design for long-term use and reuse (Diaz 2022, Chan and Sayers 2022, Risam and Gil 2022). Data science offers insight into the many dimensions of long-term data governance and management, which have many parallels to digital cartographic practice. The FAIR and TRUST principles describe how technology should be designed for interoperability and reproducibility (Wilkinson et al. 2016, Lin et al. 2020), while the CARE principle offer insights from Indigenous data governance into the social and relational dimensions of technology (Carroll et al. 2020). Building upon the insights from these related disciplines while adapting them to cartography, I will also describe the process by which the University of Wisconsin Cartography Lab (UWCL) adopted its own policies for the sustainability of digital projects. While not all projects are designed to exist indefinitely, through thoughtful planning we can create a cartography more resilient to technical and environmental change.

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