

A Quantitative Approach to the MAGNETIC MEDIA CRISIS



INTRODUCTION

What is the preservation status of magnetic media in archives' collections? To what degree are they endangered by degradation and obsolescence?

This is a quantitative study on the status of magnetic media collections (e.g. VHS, compact cassettes, open reel, betacam, etc.). The magnetic media crisis is the "perfect storm," because collections are in "large numbers, obsolescence, degradation, high research value, and short time window" (Casey, 2015). After a literature review of more than 80 resources, we found a lack of quantitative literature in the magnetic media preservation corpus. Funding agencies are partial to quantitative data as it offers stable numbers to report return on investments. Data collected from 49 archive institutions, across the United States, reveals the degree to which institutions are at risk in losing historical and cultural magnetic records due to the lack of bandwidth in digitizing collections, substandard environmental conditions, and the rapid deterioration rate of magnetic carriers. This poster illustrates the scope of the issue, helping archival institutions better advocate for their preservation needs.

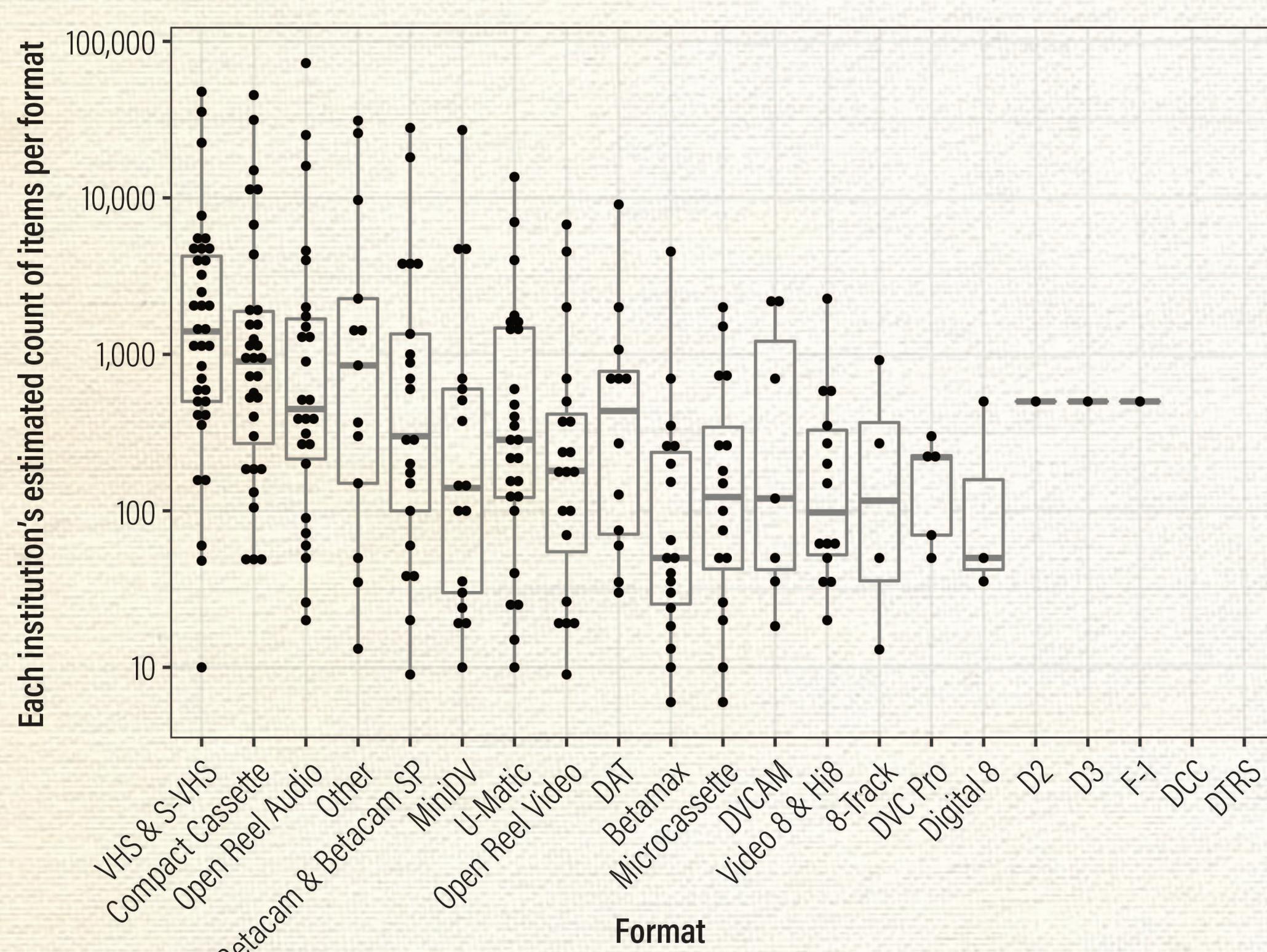
METHODS

This study involved mixed methodologies: a quantitative questionnaire fulfilled by a sample of libraries, archives, and historical societies, we gathered data on collection size, format composition, and digitization percentage to evaluate the current state of magnetic media collections. Follow-up interviews provided qualitative understanding of institutions' preservation practices.

- A 10-question survey was the primary data collection tool. Most institutions maintain records of the items and the format types within their collections. An institution who does not track this identifying data, indicates that they are not prepared to properly address the magnetic media crisis.
- On institution's holdings: How much of each magnetic media format type is in your collection? How many total hours of content recorded on the magnetic media?
- On existing preservation management strategies: How prepared do you feel you are to deal with the degradation and obsolescence of magnetic media?
- The survey was created and hosted on SurveyMonkey, and disseminated through online channels (e.g. SAA, ALA, and AMIA listservs, Twitter, and individual emails).
- The questionnaire was open for over 2 weeks (November 7 - November 21, 2018). Once closed, we used OpenRefine and Google Sheets to clean/ process data, and R to create visualizations for relational data analysis.
- We conducted 6 follow-up interviews via phone, video-chat, and in-person, to gain qualitative context. Each interview lasted for 1-hour.

RESULTS

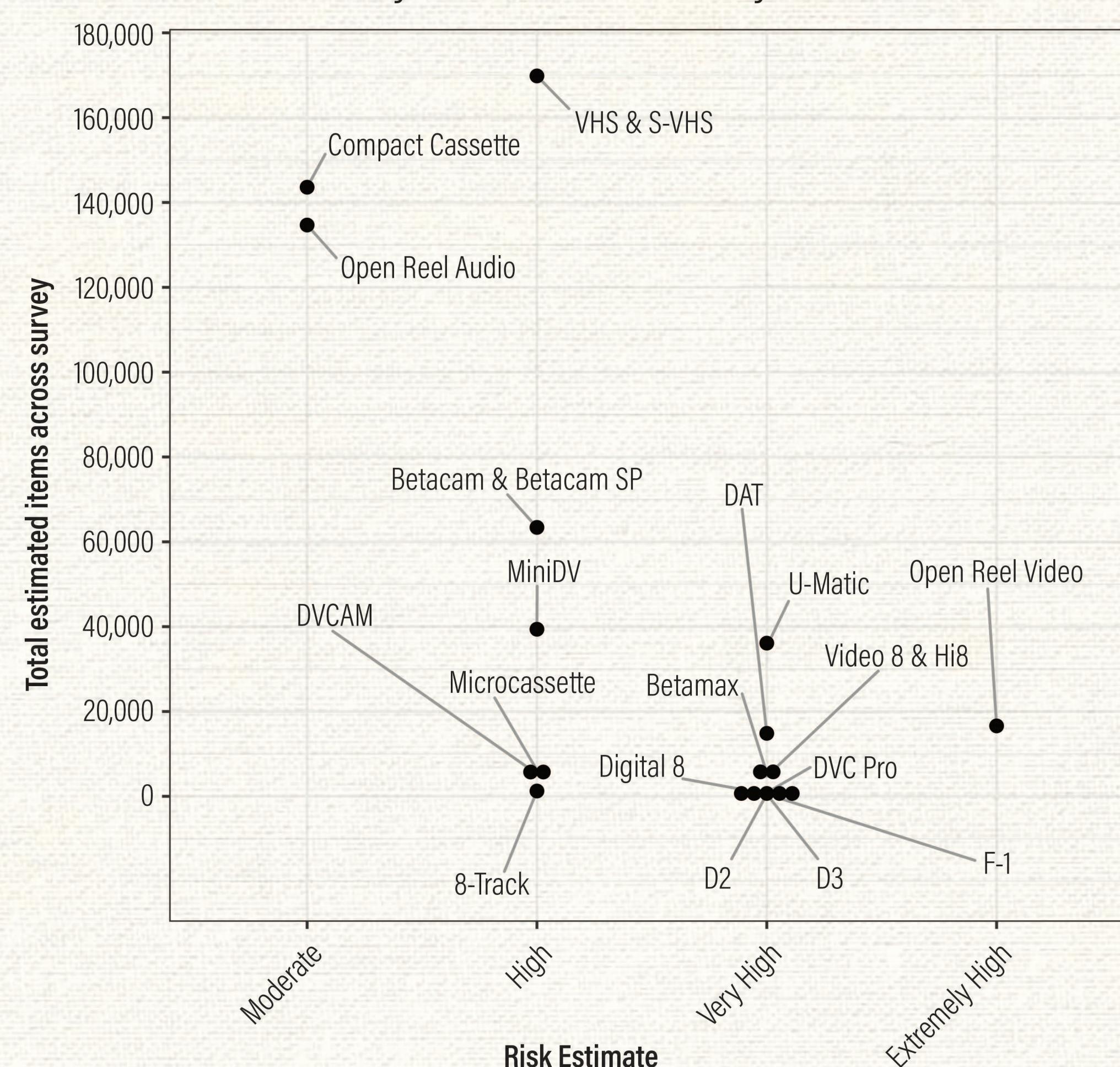
Estimated Count of Each Format Per Institution



Each institution's collection has a unique composition of item formats. Nearly all participating institutions have at least one VHS tape, but there are only 3 archives that need to deal with Digital 8. Either item counts or percentages of collection were very heterogeneous, suggesting that there is not one shared set of formats that would be served by a standard set of equipment. Would a centralized digitization center best address rare formats?

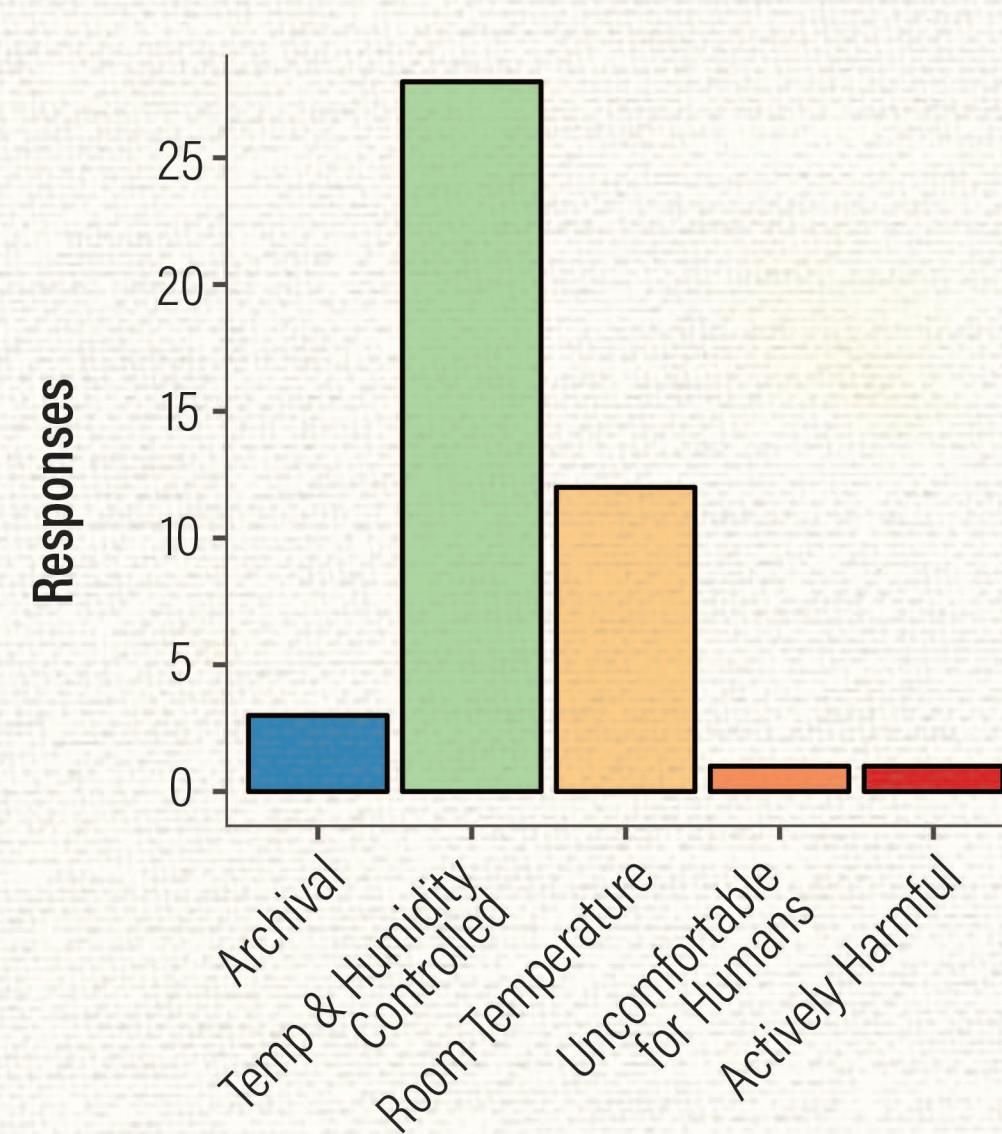
RESULTS

Quantity and Risk Factor by Format



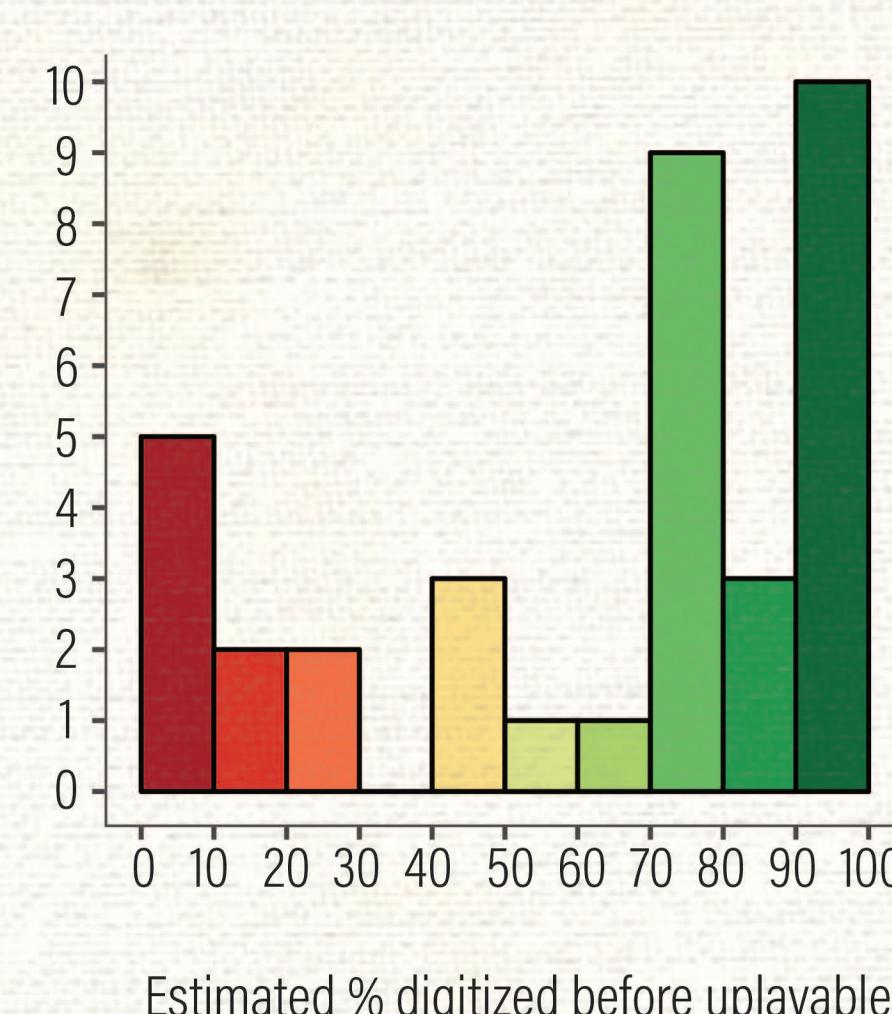
To prioritize digitization planning, we compared the sum total of items per format to each format's obsolescence risk factor (CLIR, 1995). We find a relatively low number of high-risk formats, suggesting that niche high-risk formats may be preservable with focused efforts. It is worth noting that this pattern may reflect a survivor's bias in collections.

Facility Environmental Conditions

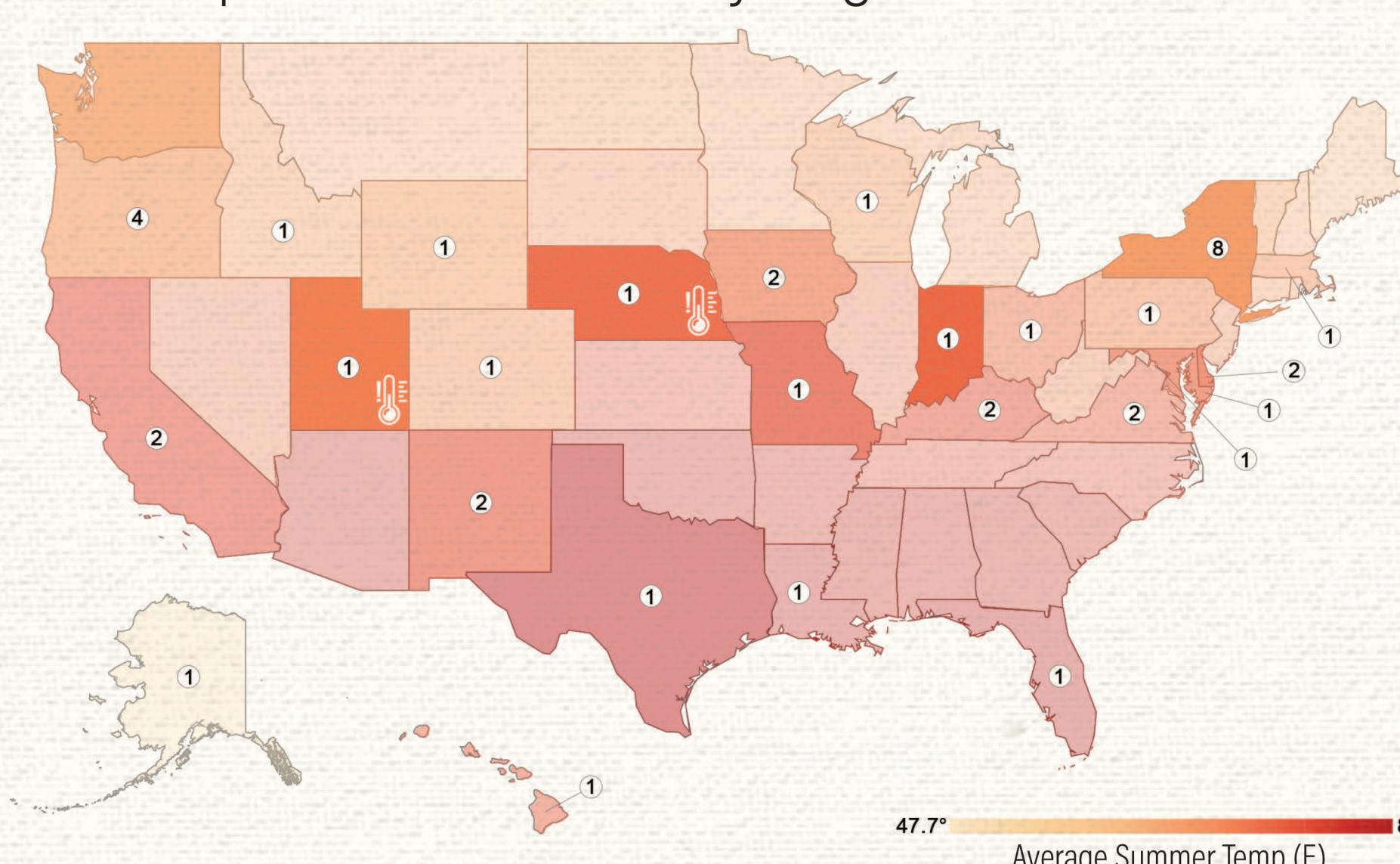


Many archivists have access to at least a temperature/humidity controlled storage facility and are expecting to have most of their magnetic media collection successfully digitized. However, some report poor storage conditions or a bleak outlook for their collection. Support and coordination amongst digital media archivists may help these archivists plan and advocate for their collection.

Chance of Successful Preservation



Response Collections by Region and Climate



The number of survey respondents per state is denoted, while state colors indicate the states average April-Oct. temperature. The color is shaded more darkly with the total amount of magnetic media items in the collection. There is some bias to states like New York, but our survey spans the nation. Many collections are in more temperate climates, but some collections will require more specialized planning to protect their tapes from summer heat. States marked with a temperature gauge indicate high risk regions with a high number of items, high heat, and room temperature storage conditions.

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