

Session 7: Preservation: Special Collections

Moderator: Samuela Nakalevu

DIGITAL PRESERVATION OF HISTORICAL FISHERIES INFORMATION IN UGANDA: THE ROLE PLAYED BY NaFIRRI LIBRARY

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Abstract:

The National Fisheries Resources Research Institute (NaFIRRI) Information and Data Centre has been engaged in digital preservation of information for quite some time. It serves as a hub for fisheries Information in Uganda. The Centre houses research information by early scientists in the areas of fisheries, aquatic environment, aquaculture, socioeconomics of all the small lakes and rivers in Uganda. The library has been involved in the process of digitizing this information since 2009. The paper highlights the achievements to date and the benefits the library has received from digital preservation, and discusses the methods it has adopted for storage and dissemination of fisheries historical Information through the various networks.

Keywords: Digital preservation, storage, historical fisheries information, Uganda, libraries.

Introduction

The National Fisheries Resources Research Institute (NaFIRRI) Information and Data Centre has been engaged in digital preservation of information for quite some time. It serves as a hub for fisheries Information in Uganda. The Centre houses research work by early scientists in the areas of fisheries, aquatic environment, aquaculture, socioeconomics of all the small lakes and rivers in Uganda. The library has been involved in the process of digitizing this information since 2009. The Library/Information Centre is the heart of the Institute, because it contains all the reports from the time of its establishment to date. The main aim of the library is to preserve and conserve digital information for access in the current and future generations to come. The functions include:

1. Information acquisition and processing.
2. Documentation of information.
3. Re-packaging information.
4. Dissemination of information to stakeholders.
5. Preservation of fisheries, water environment and aquaculture information.

Digital preservation of Information is the organization and management of digital Information and data to enable easy access over time.

According to Library of Congress, communications are no longer material, they are digital and dependent on technology to make them accessible. As new technology emerges and current technology becomes obsolete, we need to actively manage our digital possessions to help protect them and keep them available for years to come. Harrod's Librarian Glossary defines digital preservation as the method

of keeping digital material alive so that they remain usable as technological advances render original hardware and software specification obsolete. Digital preservation is referred to as the managed activities necessary to ensure continued access to digital materials for as long as necessary (Digital Preservation Coalition, 2008). Nirmal Kumar (2014) views preservation as the means by which the documentary heritage is handed down to future generations, while at the same time being made available to current users. Past, present and future are the keywords of preservation. Hedstrom (1998) defines digital preservation as the planning, resource allocation, and application of preservation methods and technologies necessary to ensure that digital information of continuing value remains accessible and usable.

According to Pamela Q.C. Andre et al. (1996), early attention to preserving digital information focused on the longevity of the physical media on which the information is stored. Even under the best storage conditions, however, digital media can be fragile and have limited shelf life. Moreover, new devices, processes and software are replacing the products and methods used to record, store, and retrieve digital information on breathtakingly short cycles of 2 to 5 years. Libraries, archives, museums and other organizations are challenged to learn about this new information environment as they take on the job of keeping digital materials alive for the next generation. Digital technologies have changed the way people communicate and learn about the world around them.

Digital continuity means ensuring digital information is managed well so that it can be accessed and used over time. One important aspect of digital continuity is preservation, which requires a proactive program to identify records at risk and take necessary action to ensure their ongoing viability.

The library defines the primary objective of digital preservation activities as maintaining the ability to meaningfully access digital collection content over time. As well as collecting digital materials and managing them for current access, the library has a mandate and commitment to preservation and has been active in developing infrastructure to collect, manage, preserve and keep our digital collections available into the future.

Medium Of Storage Of Digital NaFIRRI Information

The digitized information has been stored on CD-ROMS, electronic board, tapes, and computers.

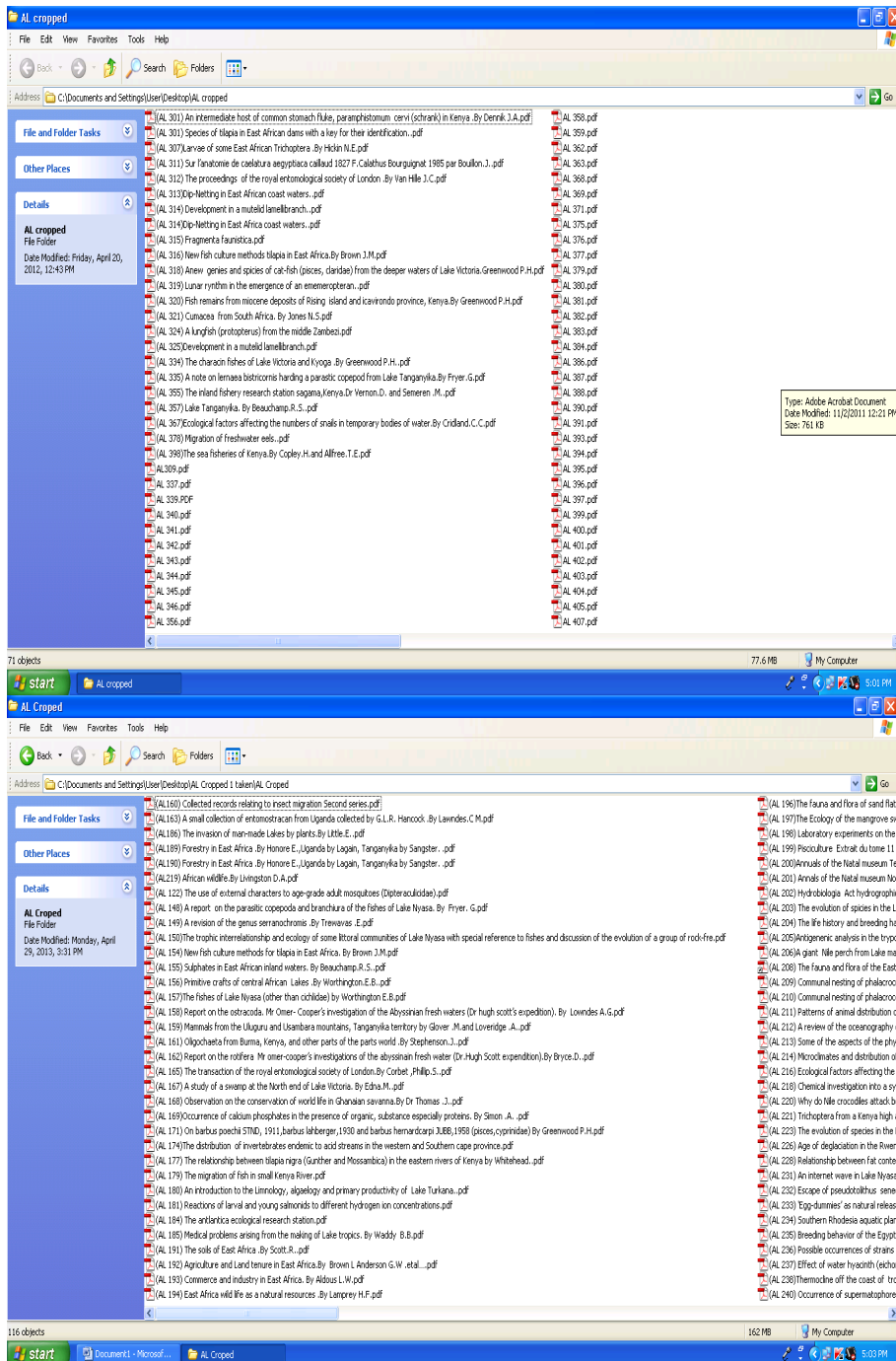


Table 1. Digitized African Lakes Literature.

Achievements In Digitization By NaFIRRI Library

1. Works by Early Scientists in the East African Freshwater Fisheries Research Organization.

- a) Greenwood Collections: Peter H. Greenwood was one of the early scientists in the then East African Freshwater Fisheries Research Organization. He did extensive research in the lakes and rivers of Uganda. The library has digitized 108 titles that are available for use by scientific community.
- b) Worthington collections: We have been able to digitize 15 papers of Worthington that are available internationally.

- c) Holden collections, Corbet and Beadle collections
- d) Ruaha River: The library has been able to digitize one paper by an early scientist on the Ruaha River.
- c) Holden collections: One report has been digitized
- d) Corbet report on the food of non-cichlid fishes in the Lake Victoria 1960 (100 pages).
- e) Beadle collections: One report of 170 pages has been digitized.
- e) River Nile Collections: The library has a huge collection of early research done on the river. Eight copies of these reports have been digitized. The library acknowledges the fact that this literature must be made available to the scientific community.

2) Digitization Of Historical Maps and Books In Partnership With National Library Of Uganda

In 2010, in partnership with the National Library of Uganda, the Library was able to digitize 345 copies of historical maps. These have been stored on CD-ROMs and are available for use by scientists and the general public. However, we are unable to place all these on our website since we don't own the copyrights.

3) Lake Victoria Environmental Management Project (LVEMP) collections: 465 copies of these reports have been digitized and are now available for access by the local public and international community at our website: <http://www.firi.go.ug>.

4) Lake Victoria Reprints

Between 2009 and 2013 the library scanned 535 Lake Victoria reprints (historical information). These have been uploaded for scientists to access internally. The E-board runs on the LAN within the Institute.

5. EAFRO reprints

A total of 472 reprints and annual reports have been digitized and are awaiting upload onto the E-board.

6. EAFRO Annual Reports

We scanned 35 Annual Reports from 1948 to date that have been uploaded to our website.

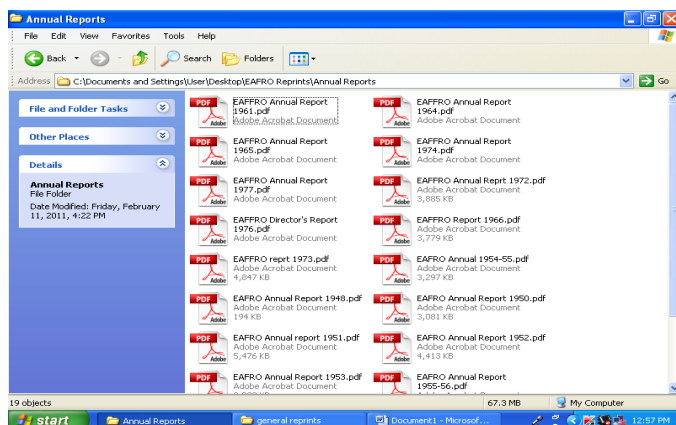


Table 2. Screenshot of the EAFRO Annual Reports.

7. EAFRO reprints

A total of EAFRO 207 reprints have been digitized and are awaiting upload onto the E-board.

8. Fish In Press Collections

The Library digitized Fish in press collections that included articles appearing in newspapers about fisheries in Uganda.

9. UFFRO Reprints

We have digitized 12 copies of the Uganda Fresh Water Fisheries Research Organization Reprints and these are waiting to be uploaded on the Electronic board.

	No. Digitized
Early Scientist Collections	126
African Lakes	199
Historical Maps	84
LVEMP reports	122
Lake Victoria Reprints	435
EAFFRO reprints	207
EAFFRO Annual Reports	35
UFFRO Reprints	12
River Nile	8
Sagana Reprints	27
Total	1255

Table 3. Digitized Historical Information.

Benefits the Library Has Received From Digitization and Preservation

1. Scientists and stakeholders can now access copies of historical scientific papers from one collection.
2. We have been able to share information easily and quickly through Z39.50 when requested by stakeholders through email and the E-board.
3. We have been able to reach a large clientele with digital information.
4. There is now a longer, stronger shelf life for historical information.



Figure 1. The processing unit for digitization.

Medium of Storage Of Digital NaFIRRI Information



Figure 2. The digitized information has been stored on CD-ROMS, Electronic board, tapes, and computers.

Challenges

1. Sometimes the E-board breaks down and scientists cannot access digital information from their desks. When this occurs they have to call for hard copies of documents.
2. We have information that was stored by early scientists on microfiches and currently we don't have a microfiche reader to access this information.
3. We have some information that was stored earlier on diskettes (big disks) and these cannot be accessed with current computers. Over time, physical storage media like data formats, hardware and software have become obsolete, posing significant threats to the survival of the content.

According to Ross and Hedstrom (2005), current approaches to digital preservation and curation are limited. They are labor intensive. They depend upon awareness of many types of risks, including technology obsolescence, deliberate alteration, interruptions in management and funding for curation, and incompetent handling.



Figure 3. Some of the old storage media.

4. We have a scanner on which documents above A4 cannot fit. This means that bigger documents such as maps and larger books cannot be scanned. Many times we have them scanned out of the institute, creating additional budgetary constraints.

Conclusion

In conclusion, the Library's digital collections are expected to continue growing. Many lots of historical information and data wait to be digitized. Although access to digital resources is threatened by many challenges, however, the benefits outweigh the challenges. The electronic digital resources should continue to coexist with the hard copies. The hard copies of documents come in to fill up the gap in case technology fails.

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