



NORTH CAROLINA
DEPARTMENT OF
CULTURAL
RESOURCES
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State Library of North Carolina

Preservation of Digital State Government Information

Amy Rudersdorf & Christy Allen
Digital Information Management Program

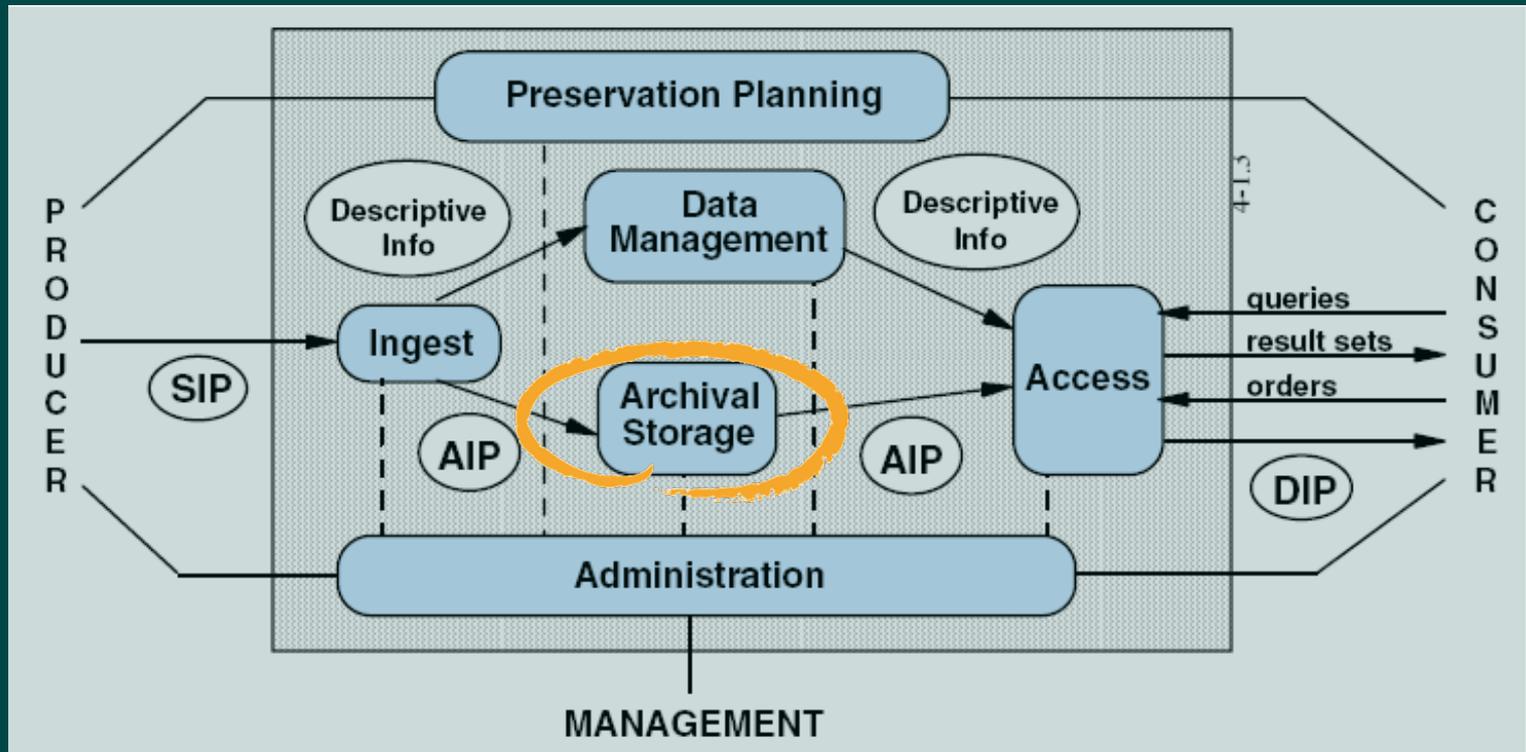


Outline

- **What is Digital Preservation?**
- **Roles and Responsibilities**
- **The State Library response**

Digital Preservation: What is it, really?

What is Digital Preservation?

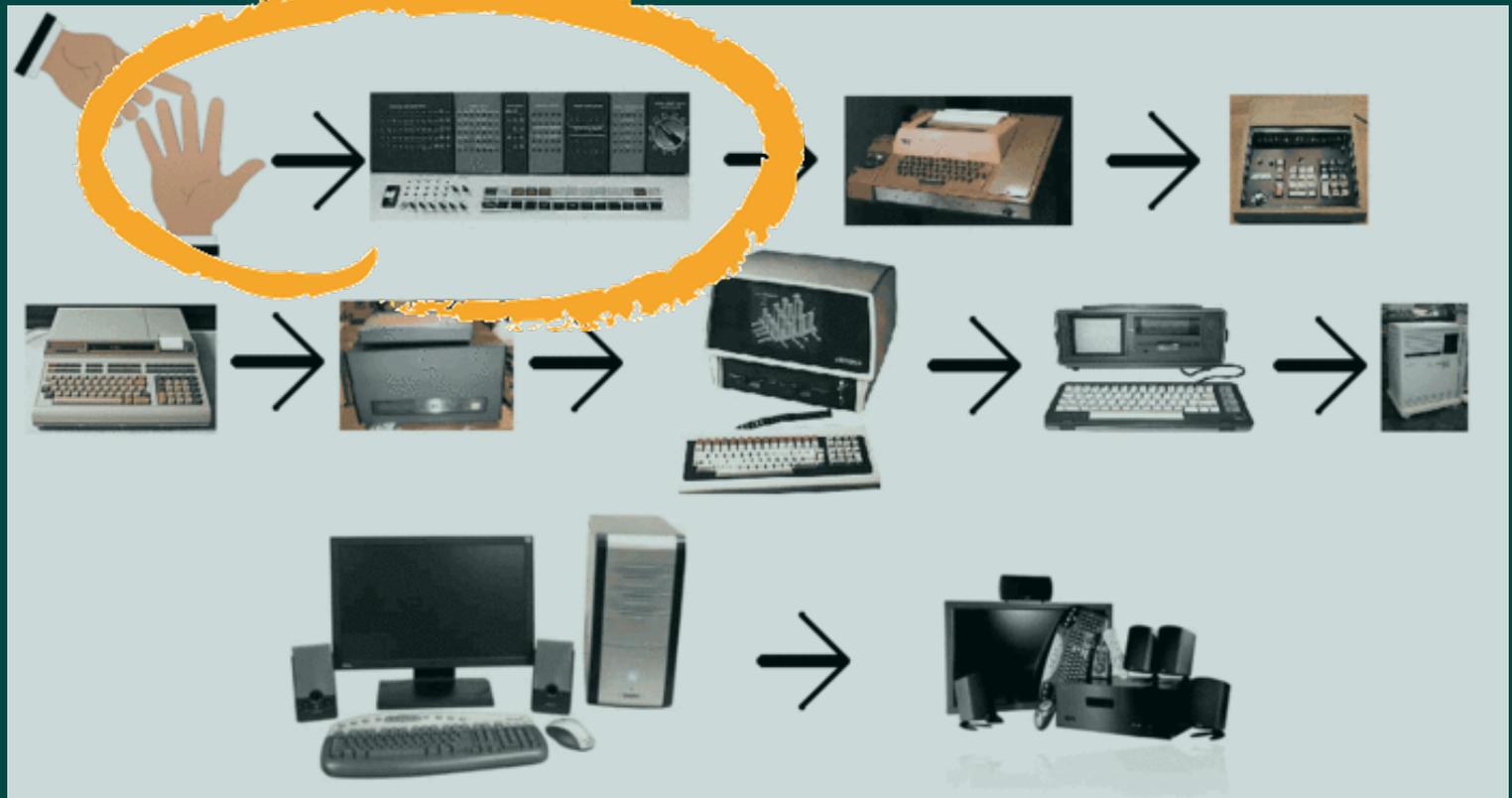


Long-term file storage is just one step in the preservation process

What is Digital Preservation?

- A series of “managed activities” designed to extend the usable life of computer files including, but not limited to:
 1. Promoting the long-term maintenance of a bitstream (the zeros and ones) and providing continued accessibility of its contents.
 2. Maintaining those bitstreams’:
 - Viability, so that information remains intact and readable from the storage media;
 - Renderability, so that it remains viewable by humans and processible by computers; and
 - Understandability, so that it remains interpretable by humans

How long did it take us to develop computing this far ... ?



Digital preservation is playing catch up

Digital Preservation: Roles and Responsibilities

The State Library's Responsibility

- Digital preservation of state documents is the Library's responsibility
 - Permanent depository for publications
 - Legislative mandate exists for the Library to:
 - *Preserve* printed and digital (including born-digital or digitized) state documents
 - *Provide public access* to these materials

Roles & Responsibilities throughout North Carolina State Government

- **State Library and State Archives**
 - Lead in planning and curation
 - Manage the digital preservation process (structure, workflows, resources)
- **State Agencies**
 - Create, distribute, and submit content
 - Collaborate with Library to aid in the lifecycle management of their digital assets
- **Others . . .**
 - DCR Management/Administration (\$\$, staffing)
 - DCR IT & ITS (storage, networks, etc.)
 - Depository Libraries (distribute, identify, provide access)



The State Library's Response

Long-term Access is the key to Digital Preservation



- In a sense, digital preservation is the “preservation of access”
- One of our objectives, then, is to preserve access to
 - high-quality,
 - high-value,
 - well-protected,
 - fully integratedversions of the original documents.

Access: SLNC Digital Repository

- **Public access interface - CONTENTdm**
- **Contains current and historical North Carolina state government information:**
 - **Born digital – documents created and distributed via computers and the web**
 - **Digitized – documents originally published in paper format, but digitized for access via the web**
- **Cataloged records (and links) also appear in WorldCat & Voyager**

Links

- ✘ [State Library of North Carolina](#)
- ✘ [Digital Information Management Program](#)
- ✘ [NC MOSAIC](#)
- ✘ [NC ECHO](#)
- ✘ [North Carolina State Archives](#)
- ✘ [Department of Cultural Resources](#)

new

State Library of North Carolina

Digital Repository

The State Library of North Carolina Digital

future.

new



State Publications Collection

A digital collection of current and historical North Carolina state publications. The types of publications include informational brochures and pamphlets, various types of reports (annual,

biennial, technical, statistical, etc.), serial publications (newsletters, checklists, magazines, etc.), handbooks, studies and a variety of other information resources produced by the government. The focus of the collection is on state government publications from 2002 to current, but will also feature historical North Carolina publications of enduring value that have been scanned from their original print format. Because new publications will be added to this digital collection, the database will be updated monthly.

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than 60 African-Americans, some of them with North Carolina ties, who were affiliated either with a church or with the Negro Business League.

updated



Eugenics in North Carolina

The eugenics movement was based on the belief that government intervention could help promote the biological improvement of humans. As part of the movement, many

North Carolina State Publications Collection

A project of the North Carolina State Publications Clearinghouse and the State Library of North Carolina

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Search the State Publications Collection

Find publications that have:

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Across All Fields



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All of the Words

Across All Fields



search

Any of the words

Across All Fields



search

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page 1 of 1 : (1) :: :

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| | Image: | Title: | Subjects: | Description: |
|-----------------------------|---|---|---|---|
| <input type="checkbox"/> 1. |  | Comparison of Russian and Italian honey bees | Honeybee--Breeding. | Caption title.; Includes bibliographical references (p. [3]). |
| <input type="checkbox"/> 2. |  | Honey bee dance language | Honeybee--Behavior.; | Cover title.; Includes bibliographical references (p. [4]). |
| <input type="checkbox"/> 3. |  | Managing backyards and other urban habitats for birds | Birds--Habitations--North Carolina.; Urban ecology--North Carolina.; Urban vegetation management--North Carolina. | Cover title.; Includes bibliographical references (p. 11).; Funded in part through the North Carolina Division of Forest Resources' Urban and Community Forestry Grant, in cooperation with the USDA Fo |

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Managing backyards and other urban habitats for birds

- Page 1
- Page 2
- Page 3
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- Page 6
- Page 7
- Page 8
- Page 9
- Page 10
- Page 11
- Page 12

Document Description (for other viewing/printing/saving options use the drop down menu on the left)

| | |
|---------------------------------|--|
| Title | Managing backyards and other urban habitats for birds |
| Other Title | Urban wildlife |
| Contributor | Moorman, Christopher. North Carolina Cooperative Extension Service. |
| Date | 2002 |
| Subjects | Birds--Habitations--North Carolina. Urban ecology--North Carolina. Urban vegetation management--North Carolina. |
| Description | Cover title.; Includes bibliographical references (p. 11).; Funded in part through the North Carolina Division of Forest Resources' Urban and Community Forestry Grant, in cooperation with the USDA Forest Service, Southern Region. |
| Publisher | N.C. Cooperative Extension Service |
| Agency | North Carolina State University, University of North Carolina (System) |
| Rights | State Document see http://digitalstatelibnc.cdmhost.com/u?p249901coll3,2 |
| Physical Characteristics | 11 p. : ill. (some col.); 28 cm. |
| Collection | North Carolina State Documents Collection. State Library of North Carolina |
| Type | Text |
| Language | eng |
| Format | Instructional materials |
| Digital Characteristics | 1.2 MB; 12 p. |
| Digital Collection | North Carolina Digital State Documents Collection North Carolina Digital State Publications Clearinghouse Collection |
| Digital Format | application/pdf |
| Related Items | http://www.ces.ncsu.edu/nreos/forest/pdf/ag/ag636_01.pdf ; http://worldcat.org/oclc/50751027/viewonline |
| Series | AG (Series) ; 636-01. |

Search for items: [Advanced Search](#)

Managing backyards and other urban habitats for birds

by [Christopher Moorman](#); [North Carolina Cooperative Extension Service.](#); et al☆☆☆☆☆
(not yet rated)Type:  Book; English

Publisher: [Raleigh, N.C.] : N.C. Cooperative Extension Service, ©2002.

OCLC: 50751027

Related Subjects: [Birds -- Habitations -- North Carolina.](#) | [Urban ecology -- North Carolina.](#) | [Urban vegetation management -- North Carolina.](#)Web Resources: ces.ncsu.eduCitations: [Cite this Item](#) | [Export to EndNote](#) | [Export to RefWorks](#)Additional Info: [View Online](#)

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Database Name: STATE LIBRARY OF NORTH CAROLINA

Search Request: Alphabetical Title = Managing backyards and other urban habitats for birds

Search Results: Displaying 1 of 1 entries



[Brief Record](#)

[Detailed Record](#)

[MARC Format](#)

Managing backyards and other urban habitats for birds / [prepared by Chris...

Details: FOR MORE INFORMATION ON THIS TITLE, CLICK ON "DETAILED RECORD" ABOVE

Title: Managing backyards and other urban habitats for birds /

Publisher: [Raleigh, N.C.] : N.C. Cooperative Extension Service, c2002.

Description: 11 p. : ill. (some col.) ; 28 cm.

Subject(s): [Birds --Habitations --North Carolina](#)

[Urban ecology --North Carolina](#)

[Urban vegetation management --North Carolina](#)

Web Link: <http://worldcat.org/oclc/50751027/viewonline>

Access: Digital Repository

- **Persistent (albeit cryptic) URL**
 - Appears throughout OCLC products
 - Can be linked from any external resource
 - Links to the record not the resource

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Document Description (for other viewing/printing/saving options use the drop down menu on the left)

| | |
|---------------------------------|--|
| Title | Historical Raleigh from its foundation in 1792 : descriptive, biographical, educational, industrial, religious; reminiscences reviewed and carefully compiled. |
| Creator | Amis, Moses N. (Moses Neal), b. 1800 |
| Date | 1902 |
| Subjects | Raleigh (N.C.)--History Wake County (N.C.)--History |
| Description | Advertising matter interspersed with text. in 1902. |
| Publisher | Edwards & Broughton, printers |
| Rights | Public Domain see http://digitalstatelibrarync.org/ |
| Physical Characteristics | 1 p. l., [5]-230 p. incl. illus., port. 2 |
| Collection | General Collection. State Library of North Carolina |
| Type | Text |
| Language | eng |
| Format | Books |
| Digital Collection | From Crossroads to Capital: The Early History of Raleigh, North Carolina |
| Digital Format | image/jpeg |
| Related Items | http://worldcat.org/odc/3644932/viewonline |
| Audience | All |

<http://digitalstatelibrarync.cdmhost.com> - Reference url - ...

Copy and paste the URL for use within citations.

<http://digitalstatelibrarync.cdmhost.com/u?p249901coll26,1277>

close

Done



Search for items: **Search**[Adv:](#)

Historical Raleigh from its foundation in 1792; descriptive, biographical, educational, industrial, religious; reminiscences reviewed and carefully compiled.

by [Moses N Amis](#)Type:  Book; English

Publisher: [Raleigh, Edwards & Broughton, printers] 1902.

Editions: [3 Editions](#)

OCLC: 3644932

Related Subjects: [Raleigh \(N.C.\) -- History.](#)Citations: [Cite this item](#) | [Export to EndNote](#) | [Export to RefWorks](#)Additional Info: [View Online](#)

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Database Name: STATE LIBRARY OF NORTH CAROLINA

Search Request: Alphabetical Title = historical raleigh from its foundation

Search Results: Displaying 1 of 1 entries



Brief Record

Detailed Record

MARC Format

Historical Raleigh from its foundation in 1792; descriptive, biographical,...

Details: FOR MORE INFORMATION ON THIS TITLE, CLICK ON "DETAILED RECORD" ABOVE

Author: [Amis, Moses N. \(Moses Neal\)](#),

Title: Historical Raleigh from its foundation in 1792; descriptive, biographical, educational, industrial, religious; reminiscences compiled.

Publisher: [Raleigh, Edwards & Broughton, printers] 1902.

Description: 1 p. l., [5]-230 p. incl. illus., port. 20 cm.

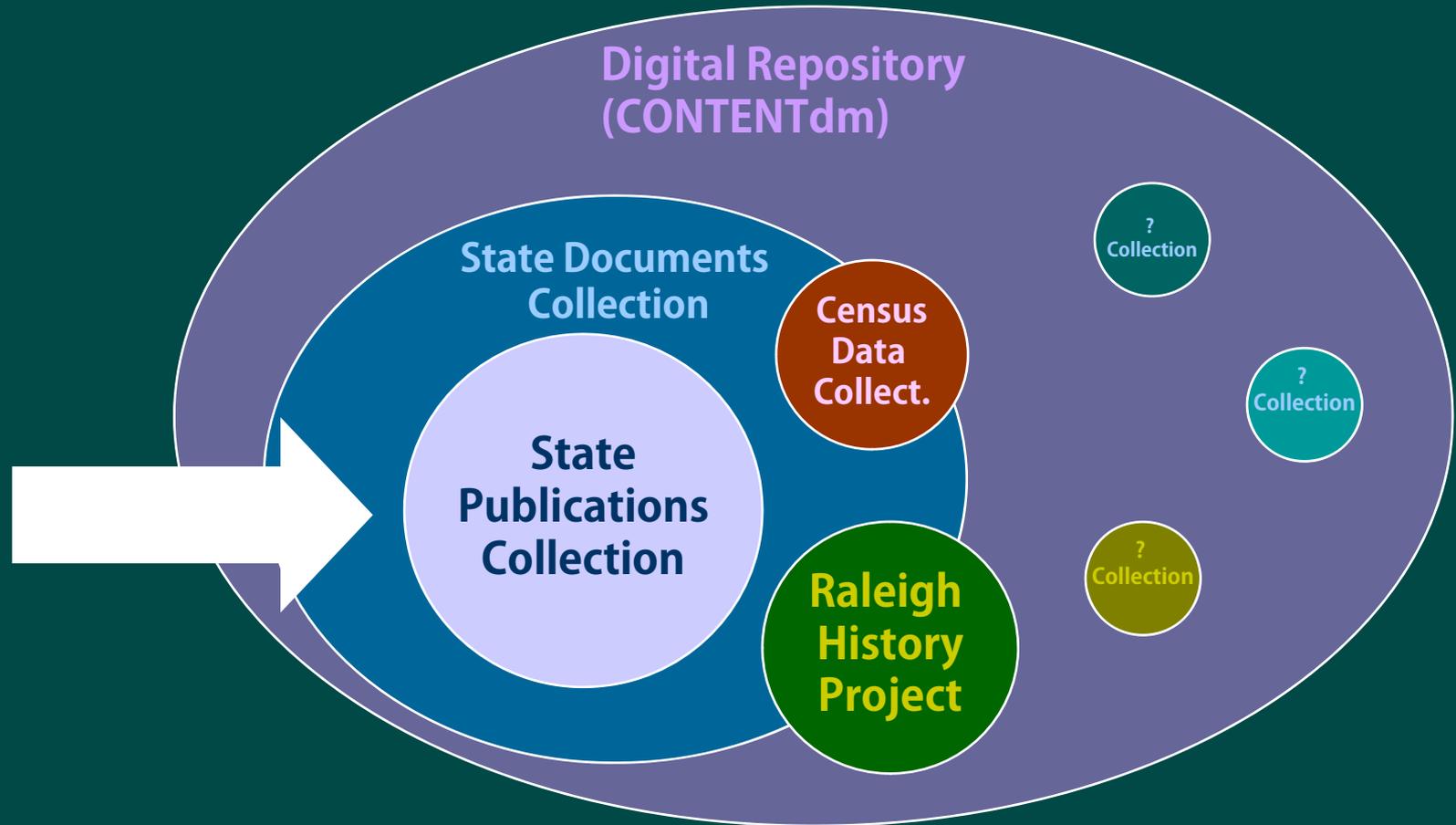
Subject(s): [Raleigh \(N.C.\) --History.](#)

Web Link: [View this book online](#)

Location: Genealogy

Access: Digital Repository

A single collection with many sub-collections





Publicly Available Digital Repository Collections

- 1. NC Digital State Publications Collection**
 - Focus on born-digital files
 - First set of records publicly available in May, with ongoing additions monthly
- 2. From Crossroads to Capital: The Early History of Raleigh, North Carolina**
 - Digitized collection of historical state documents and other North Caroliniana from the State Library and State Archives collections
 - First project in the repository
- 3. Eugenics in North Carolina**
 - Originally a web exhibit (2003)
 - Now full-text searchable

From Crossroads to Capital

The Founding and Early History of Raleigh, NC

Project of the State Library of North Carolina and the North Carolina State Archives

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It is difficult to imagine, but that less than 250 years ago, the bustling capital of North Carolina was nothing more than acres of forested lands with a nearby tavern for travellers journeying across the state.

Come witness the founding and early history of North Carolina's most powerful city in this exciting project from the State Library and State Archives of North Carolina. Browse through digital copies of original documents, maps, books, and images; check out the additional resources on this site; and explore the evolution of Raleigh from its beginning as a crossroads, throughout its founding, and into its early formative years.



Eugenics in North Carolina

A Project of the State Library of North Carolina



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Eugenics in North Carolina

The eugenics movement of the early twentieth century grew out of the research and writings of the English scientist, Sir Francis Galton (1822-1911). Galton, the half-cousin of Charles Darwin, had a variety of interests included psychology, genetics, and statistics. Among his beliefs was the idea that government intervention could help promote the biological improvement of humans.

As part of the movement many states, including North Carolina, enacted laws that allowed sterilization of the "mentally diseased, feeble minded or epileptic." North Carolina's first sterilization law was enacted in 1929. Four years later the General Assembly created the Eugenics Board to review sterilization cases. Subsequently renamed the Eugenics Commission, it remained a part of the state's government until it was abolished in 1977.

This web project, presented by the State Library of North Carolina features the works of the Eugenics Board/Commission as well as literature related to the Eugenics movement in North Carolina between 1929 and 1977.

[+](#) SHARE    ...



Digital Repository Collections in Development

3. State Data Center's Census Profiles Collection

- Proposed pilot project to digitize paper documents to bring them together with newer born-digital materials in same "series"
- Goal is to unify access to related material in variety of formats

4. Library's role in "Telling Our Stories" (DCR year-long celebration)

- History of public libraries in North Carolina
- <http://statelibrary.dcr.state.nc.us/dimp/digital/publiclibraries/info.html>

Access: Web Site Archives

- Contains web sites from the fall of 2005, and from April 2006 forward
- Allows free and open access to this information long after the sites have changed on the live web
- Currently collecting on a monthly basis; may change to every other month
- Using the Internet Archive's Archive-It tool



North Carolina State Government Web Site Archives

North Carolina State Archives State Library of North Carolina

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Other Sites

- [Archive-It](#)
- [Internet Archive](#)

The *North Carolina State Government Web Site Archives* allows you to view North Carolina state agency web sites from past dates. The *Web Site Archives* contains web sites from the Fall of 2005, and from April 2006 forward allowing free and open access to this information long after the sites have changed on the live web.

The *Web Site Archives* can be searched via the search box on the top of every page on this site. For tips and helpful hints on searching, read our [Search Help](#) document. Users may also browse for web sites by [State Agency](#) or by [Collection](#).

The *Web Site Archives* began as a pilot project with the [Internet Archive](#) during the Fall of 2005. The purpose of this project was to refine a tool called [Archive-It](#) which collects, preserves, and provides access to web sites of enduring value.

The success of the Pilot Project led to the creation of the current version of *The North Carolina State Government Web Site Archives* which began archiving web sites in late April of 2006. The *Web Site Archives* contains copies of state agency web sites captured during the pilot project in the Fall of 2005 and after the official launch in April 2006 forward.

The *North Carolina State Government Web Site Archives* is proof of the ongoing commitment by the North Carolina State Archives and the State Library of North Carolina to provide free and open access to state government records and



Above: Screenshot of the Governor's web site from Sept. 20th, 2005. Click image to view site

Access: NC MOSAIC

- **Web portal that links to current and historical information produced by North Carolina state agencies and related materials held by organizations throughout North Carolina**
- **Strengthen access and retrieval by identifying, organizing, and linking these valuable resources**



NC MOSAIC

Managing, Organizing, and Strengthening
Access to Institutional Collections

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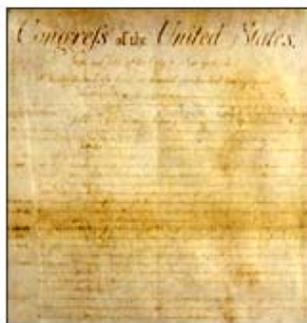
[NC MOSAIC Partners](#)

Welcome to the NC MOSAIC portal!

Your link to current and historical information produced by North Carolina state agencies and related materials held by a wide range of organizations throughout North Carolina.

WHAT IS NC MOSAIC?

A web portal that links to current and historical North Carolina state government information collections found in institutions and agencies throughout the state. MOSAIC stands for Managing, Organizing, and Strengthening Access to Institutional Collections.



North Carolina's original
copy of the Bill of Rights.

Housed at the
[North Carolina State Archives.](#)

The purpose of the NC MOSAIC website is to provide a dynamic, modern, user-friendly discovery aid for researchers interested in current and/or historical North Carolina government – and related – information. While many people are aware that institutions throughout North Carolina maintain significant government information collections, it isn't always clear to the citizens of the state which institutions hold what specific government information.

WHY IS STATE GOVERNMENT INFORMATION IMPORTANT?

Current state government information is necessary for the proper functioning of North Carolina society. Citizens need it to properly conduct business; provide services; participate in society; and comply with state law. Various users, including students, businesses, farmers, legislators, local government, and journalists, expect accurate and reliable current and historical state government information to be available and accessible to them.

Historical state information has enduring value and significance as a vital source of evidence of government activities and decisions over time and remains an important source of corporate memory for the government and people of North Carolina.

Long-term storage: First steps



OCLC's Digital Archive -- Baby steps towards preservation storage

- Backed up at least 6 times
- Minimal preservation activities performed, but more than most available systems:
 - virus checking, format verification, fixity checking (to ensure the bits aren't changing)
 - A *very basic* metadata database that tracks *very minimal* preservation information
- *Not just storage!*

Long-term storage: First steps

- **Involved in a few tests, pilots, and research projects**
 - **Grid storage computing (SDSC)**
 - **LOCKSS storage (MetaArchive)**
- **The Library will need to consider migration in a few years**
 - **File format obsolescence**
 - **Media obsolescence**

Acquisition: More baby steps

- Right now, we acquire born-digital files via email or on disk.
- We are involved in a research project to develop an “end-to-end preservation solution” (iRODS)
 - Ingest digital data
 - Extract descriptive metadata
 - Manage data (move it efficiently, share it securely with collaborators, publish it in digital libraries)
 - Archive data for long-term preservation.





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Many steps taken . . . A long way to go!



- We have accomplished a lot in the past year, but we have a great deal left to do!
- Until there are viable end-to-end preservation systems available, we will continue to research and test tools that most appropriately care for state government documents



Links to references

CCSDS Secretariat (NASA). 2002. *Reference Model for an Open Archival Information System (OAIS)*. URL:

<http://public.ccsds.org/publications/archive/650x0b1.pdf>

Digital Archive (OCLC). <http://www.oclc.org/digitalarchive/>

From Crossroads to Capital: The Founding and Early History of Raleigh, NC. <http://statelibrary.dcr.state.nc.us/dimp/digital/rhp/index.html>

iRODS. <https://www.irods.org/>

MetaArchive Cooperative. <http://www.metaarchive.org/>

NC MOSAIC. <http://www.mosaic.ncdcr.gov/>

NC State Government Website Archives.

<http://www.ah.dcr.state.nc.us/archives/webarchives/index.html>

NC State Digital Publications Collection.

<http://statelibrary.dcr.state.nc.us/stdocs/cdm/index.html>

State Library Digital Collections.

<http://statelibrary.dcr.state.nc.us/dimp/digital/index.html>

State Library Digital Repository.

<http://digitalstatelibnc.cdmhost.com/cdm4/search.php>