

# Geospatial Multistate Archives and Preservation Partnership

## 2008 NC State Agency GeoArchives Survey

Survey conducted by

**NC Center for Geographic Information & Analysis and  
North Carolina State Archives**

in Partnership with

**The Library of Congress**

**National Digital Information Infrastructure and Preservation Program (NDIIPP)**

and

**KY Division of Geographic Information and Department for Libraries and Archives,  
NCSU Libraries, and UT Automated Geographic Reference Center and State Archives**

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**NORTH CAROLINA  
DEPARTMENT OF  
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## 2008 North Carolina State Agency GeoArchives Survey

### Investigating the Frequency of Capture of Geospatial Data in State Government

#### Project Introduction

The Geospatial Multistate Archives and Preservation Partnership (GeoMAPP) involves collaboration between state GIS and archives staffs across three states, supported by the Library of Congress' National Digital Information Infrastructure and Preservation Program (NDIIPP). Partners include:

- North Carolina:
  - Center for Geographic Information and Analysis (CGIA),
  - North Carolina State Archives
  - NC State University Libraries
- Kentucky:
  - Division of Geographic Information (DGI)
  - Department for Libraries & Archives (KDLA)
- Utah:
  - Automated Geographic Reference Center (AGRC)
  - Utah State Archives

GeoMAPP is focused on the collection and preservation of digital geospatial data content within each participant state, investigating multistate data transfer and sharing, and documenting best practices for both intrastate and interstate data management and transfer practices.

Objectives of the project include:

- Identification of at risk or temporally valuable geospatial content
- Determine technology and capacity requirements for the implementation of systems that ensure long term access to geospatial content
- Develop best practices for transfer and movement of geospatial content to state archives and among states
- Compile business plan documentation to help inform decision makers on the benefits of geo-preservation
- Conduct Outreach
- 

#### Survey Overview

The 2008 NC State Agency GeoArchives Survey is an initial effort to measure the prevalence and maturity of preservation efforts for geospatial data by state agency geospatial data creators in North Carolina. A key focus of the survey is determining the GIS creators' familiarity with records retention practices and the business drivers for and benefits of the retention of superseded geospatial data.

An additional focus is on the actual data sources being preserved and archives management practices. Data layers of interest include “at risk” data that are updated periodically where superseded copies are often overwritten and lost for future use and analysis, as well as remotely sensed data such as digital orthophotos, which are valuable for historic mapping and change analysis.

The State Agency Survey is related to three additional geospatial archives surveys whose target audiences include: NC local government GIS contacts and two nationwide surveys targeting state GIS coordinators and state archivists. All four surveys were launched during the summer of 2008 and address similar issues across the respective communities.

This survey was collaboratively designed by North Carolina State Archives and CGIA, using the 2006 and 2008 Local Government surveys as a template. The survey was launched via an email to the NC State GIS Users Committee listserv that includes approximately 110 total subscribers. Concurrently, targeted emails were sent out from state archives staff to agency Chief Records Officers (CROs) and approximately 100 state agency GIS users that are registered as GIS creators in the NC GIS Inventory. The survey was administered between June 10 and June 30, 2008 using the SurveyMonkey.com web service.

### Survey Objective

The objective of this survey is to document the current practices of state agency GIS creators as it relates to the frequency of capture of superseded geospatial data for archival and long-term access purposes. The survey clearly delineated the difference between routine backups and data archival practices on the survey introduction page in an attempt to focus the responses on data that are being preserved for long term use and analysis.

### Response Status

There were 58 valid responses to the survey, representing six state departments, including four of the state’s largest geospatial data creators: the Department of Environment and Natural Resources (DENR), the Department of Transportation (DOT), the Department of Agriculture and Consumer Services (NCDA&CS), and The Department of Commerce (Table 1). Additionally, representatives of two other departments informally responded to the survey by sending notification that their departments are not currently creating geospatial data. In total, this represents response from eight of the twelve state departments targeted for this survey. The survey had a 61% response rate from targeted individuals which is a strong response to an online survey. The survey also acted as a good outreach effort to the state agency community for the project’s GeoArchives message.

**Table 1: Survey Respondents by Department**

Department	Respondents
Environment and Natural Resources	26
Transportation	4
Commerce	2
Agriculture	1
General Assembly	1
Employment Securities Commission	1

In addition to having a diversity of responses among GIS data creators across state agencies, a significant number of sub units participated from DENR. Table 2 lists the 14 different DENR agencies that responded, including the Division of Land Resources which is comprised of three large, autonomous data creating entities: the NC Geological Survey, NC Geodetic Survey, and the NC Land Quality Section.

**Table 2: Respondents per DENR Agency**

DENR Agencies/ Respondents			
Land Resources	5	Ecosystem Enhancement Program	1
Coastal Management	3	Forest Resources	1
Waste Management	3	Info Technology Services	1
Water Quality	3	Marine Fisheries	1
Environmental Health	2	Natural Heritage Program	1
Wildlife Resources Commission	2	Parks and Recreation	1
Center for Geographic Info & Analysis	1	Water Resources	1

A significant number of respondents, 23 in total, and representing 40% of the survey pool did not provide detailed contact information. While the contact information was requested later in the survey, it was a required question and response to this question was explicitly requested in follow-up emails to the survey target community. It is unclear why individuals did not provide their contact info, though it is unlikely that this omission was due to inapplicability of the survey to the targeted respondents, as 52% of the individuals that failed to provide contact info responded that they are archiving geospatial data. A closer review of the response data supports the conclusion that many of these individuals (57%) stopped taking the survey when asked to explain the frequency of capture of the different data layers being archived (question 8). Only 22% of respondents lacking contact info completed the full survey (outside of the contact info). Despite this anomaly, the response rate to the survey was strong and the diverse distribution of respondents was similar to the numbers of targeted individuals and agencies.

## Results

Table 3 shows 50% of the combined group of respondents from all state agencies responded “yes” to the question asking “does your agency capture or retain snapshots of superseded geospatial data for archival or historical purposes”. Interestingly, almost a quarter of respondents were “not sure” if their agency retains copies of superseded geospatial data.

**Table 3: Archives Activity**

Department	Archive Status		
	Yes	No	Not Sure
Agriculture	100%		
Commerce		50%	50%
DENR	50%	38%	12%
DOT	50%		50%
Gen Assembly	100%		
NCESC		100%	
Unknown	52%	13%	35%
Totals	50%	26%	24%

In a later question, respondents were asked about the different types of superseded geospatial data their organization was actively archiving (at least once a year). Table 4 shows that the most frequently archived layers across respondents were Biological/ Environmental (58%), Hydrological (46%) data, and 35% of respondents are also archiving Digital Orthophotos, Boundary Information, and Address/ Geodetic points.

**Table 4: Data Archival by Data Type (all respondents)**

All Respondents	
Data Type	% Archiving
Biological/ Environmental	58
Hydrological	46
Boundaries	35
Digital Orthophotos	35
Address/ Geodetic points	35
Land Cover	31
Parcel/Cadastral	31
Transportation	31
Geological	27
Utilities	19
Elevation	15
Societal/ Health	11
Agricultural	8

These results were heavily influenced by DENR, representing 62% of the respondents to this question. Table 5 notes that the data most frequently archived by DENR include: Biological/ Environmental, Hydrological, Digital Orthophotos, Land Cover and Geological. The unique inclusion of land cover and geological data in DENR's archives speaks to the agency's focus on physical and earth sciences. Other layers such as boundaries, address/ geodetic points, parcel/ cadastral, and transportation play a larger role in the archives of agencies outside of DENR.

**Table 5: Data Archival by Data Type (DENR vs. Non-DENR Respondents)**

DENR		Non DENR Agencies	
Data Type	% Archiving	Data Type	% Archiving
Biological/ Environmental	56	Biological/ Environmental	60
Hydrological	50	Boundaries	50
Digital Orthophotos	31	Address/ Geodetic points	50
Land Cover	31	Digital Orthophotos	40
Geological	31	Hydrological	40
Boundaries	25	Parcel/Cadastral	40
Address/ Geodetic points	25	Transportation	40
Parcel/Cadastral	25	Land Cover	30
Transportation	25	Utilities	30
Elevation	19	Societal/ Health	20
Utilities	13	Agricultural	20
Societal/ Health	6	Geological	20
Agricultural	0	Elevation	10

### Survey Result Highlights

This section is focused on unique and notable responses to certain survey questions. In the first question pertaining to awareness of records retention practices, 40% of respondents were either familiar with or responsible for their agency's records retention schedule, while only 14% stated that they were not familiar with the concepts of records retention schedules or record series. While this awareness of retention schedules is promising, 56% of the respondents who said they were archiving geospatial data were not sure if geospatial data was included in their agency records retention schedule and only 19% confirmed that geospatial data was represented in their schedules.

In looking at the business drivers for GeoArchives, survey respondents cited historic mapping (44%), records retention/ archival policy (42%), change analysis (31%) and legal or statutory purposes (28%) as being the primary business drivers for geospatial data archives. These results are very similar to the business drivers provided by local government respondents in an earlier survey, with the exception being a heavier influence of archival policy and change analysis in the state survey. The business driver of change analysis is probably more prevalent

in state agency geospatial work due to the analytical focus on scientific, demographic, or policy research in state agency geospatial projects. Several other unique, manually entered business drivers for archival of superseded data include helping support data stewardship activities and to provide materials for future agency projects and activities.

A variety of responses were received for the free text question addressing the age/ maturity of GeoArchives programs and data. Many respondents and organizations are in the initial phases of building their GeoArchives and currently have few data older than 5 years. Despite this fact, several respondents are managing truly historic data: geodetic control points dating back to 1848, hard copy maps from the 1890's and geologic maps and orthophotos created in the 1940's and 50's. Addressing the practice of digitizing paper maps and aerial photos, 43% of respondents have digitized, and in some cases geo-referenced, historic maps or aerial photos. Many of the maps that have been digitized are geologic or geodetic in nature.

Unique GIS output products that are being retained by state agencies include Portable Document Format (.pdf) copies of: river basin planning documents, oceanfront erosion rate maps, maps for wildfire, hurricane, and other emergency responses, as well as project deliverables relating to issues such as zoning, downtown revitalization, annexation, and land use.

The survey included two questions about unique uses of archived data and best practice recommendations, yielding a number of valuable results. In the unique uses question, many respondents cite the value of superseded geospatial data for historical reference and change analysis. Several unique datasets utilized in change analyses included: land use/ land cover, impervious surfaces, watersheds, coastal features, and shellfish growing areas. Some legal uses of archived data included: assigning permits, material used for court cases, and resolution of voting district and precinct issues. Other unique archived data uses included help in creating boundary surveys and as tool to analyze past election results

Responses in the best practices and recommendations section cite the need to implement consistent policies and develop workflows for the archival of superseded geospatial records. One of the challenges identified by respondents is not having a central repository for storing and tracking their archived data. This lack of a managed archives system increases the difficulty of locating important records needed for analysis. Another challenge faced by respondents is ensuring that retained records have value and utility for current and future use. One respondent succinctly described some of the challenges agencies face in managing their archived spatial data as well as the end value for the effort:

*"(It is) difficult to find space to store (data) electronically, revise metadata, and catalog amid the demands of daily job duties. However, preserving superseded geospatial data has proved useful to our permitting tasks in our section."*

The final observation involves two questions pertaining to metadata. On a positive note, 80% of respondents report saving some form of a metadata record with geospatial data when it is archived, however only 12% of individuals update the metadata record to reflect the data's new status as "archived". While a higher percentage of individuals in state government are including metadata with their archived geospatial data compared to those in local government (80% versus 50%), a clear opportunity exists for both organizational types as it pertains to metadata update upon archiving, as almost 90% of respondents in both local and state government are currently not performing this update

## Conclusion

The primary goals of the 2008 State Agency GeoArchives survey include gaining an understanding about the awareness of archives practices by state government geospatial data creators, determining the scope and maturity of their GeoArchives practices, and performing outreach to the state agency community to raise awareness about preservation of superseded geospatial content.

The survey results provide relevant findings about the awareness of archives practices as it pertains to geospatial data. Over 85% of the responding geospatial data creators indicate having some awareness of the concepts of records retention and records series, while half of all respondents are capturing geospatial data for their archives.

The questions about business drivers for data archival and the unique uses of archived data yielded many valuable responses and certainly support the position that state agency GIS creators currently use and are anticipate a continuing need for access to superseded geospatial data to support analyses integrated in core business practices. Respondents also consistently cite the challenges of setting up and supporting dedicated workflows to manage and maintain superseded data.

The final goal of this effort was to conduct outreach and inform state geospatial data creators about archival issues. Successful outreach measures included:

- Delivery of the “message” of GeoArchives to over 100 GIS users and creators across state agency via the survey launch and advertizing message sent to GIS-centric statewide listservs.
- Targeted communications and follow-ups from analysts from State Archives to the Chief Record Officers and GIS creators in the departments they support. This communication helped to facilitate communication between GIS creators, agency CROs and State Archives staff supporting the department.
- Receiving some form of survey response from 60 individuals representing eight unique state departments. Respondent feedback included valuable information about GeoArchives practices, business drivers and data uses within state government.
- Findings will be reported in various upcoming events and will be made available on [www.geomapp.net](http://www.geomapp.net)

## Appendix I: Questions and Results: 2008 NC State Agency GeoArchives Survey

### Summary of Survey Results

What tools do you use to INVENTORY your geospatial data? (choose all that apply)		
Answer Options	Response Percent	Response Count
NC GIS Inventory (Ramona)	55.2%	32
ESRI ArcCatalog	50.0%	29
Other	17.2%	10
Homegrown or Open Source solution	24.1%	14
We aren't inventorying our geospatial data	17.2%	10
Other (please specify)		14
<i>answered question</i>		<b>58</b>
<i>skipped question</i>		<b>0</b>
<b>Other (please specify)</b>		
National Spatial Reference System		
We submit PDF's to Digital Docs of the finished product		
Microsoft SQL Server		
Photos & documentation		
Geospatial One Stop		
We inventory some of our geospatial data, but much of it is decentralized and has yet to be inventoried.		
Paper maps		
Excel Spreadsheet		
Internal Spreadsheet		
Project deliverables archive		
Excel		
ESRI		
yearly snapshots of inventory in .xls format		
Access database		

How familiar are you with your agency's records retention and disposition schedule? (choose one)		
Answer Options	Response Percent	Response Count
I am responsible for keeping the schedule up to date and/or making sure it is implemented	13.8%	8

I have reviewed our plan and have a general understanding about what's included	25.9%	15
I'm familiar with the concept, but not sure what's in our agency's schedule	46.6%	27
I haven't had any exposure to retention plans/record series	13.8%	8
<i>answered question</i>		<b>58</b>
<i>skipped question</i>		<b>0</b>

<b>Does your agency capture and/or retain snapshots of superseded geospatial data for archival or historical purposes?</b>		
<b>Answer Options</b>	<b>Response Percent</b>	<b>Response Count</b>
YES	50.0%	29
NO	25.9%	15
Not Sure	24.1%	14
<i>answered question</i>		<b>58</b>
<i>skipped question</i>		<b>0</b>

<b>Is geospatial data specifically addressed in your agency records retention schedule?</b>		
<b>Answer Options</b>	<b>Response Percent</b>	<b>Response Count</b>
YES	19.4%	7
NO	25.0%	9
Not Sure	55.6%	20
<i>answered question</i>		<b>36</b>
<i>skipped question</i>		<b>22</b>

<b>What are the business rules or drivers for your agency's retention of superseded geospatial data? (check all that apply)</b>		
<b>Answer Options</b>	<b>Response Percent</b>	<b>Response Count</b>
Information technology policy	11.1%	4
Records retention/ archival policy	41.7%	15
Other	16.7%	6
Tax administration rules	0.0%	0
Legal or statutory purposes	27.8%	10

Change analysis (land use/land cover, population, etc)	30.6%	11
Historic mapping	44.4%	16
Cultural preservation	8.3%	3
N/A	11.1%	4
Other (please specify)		7
<i>answered question</i>		<b>36</b>
<i>skipped question</i>		<b>22</b>
<b>Other (please specify)</b>		
Sometimes we need it to fill requests. We're the stewards of certain layers, so try to keep copies at important time points		
It is done on an ad-hoc basis		
Self-initiated only for imagery at this point.		
Since the geospatial data is data, the N.C. Geological Survey retains copies of the material for future projects and activities		
geologic mapping, landslide hazard mapping		
geological and landslide hazard mapping		
data is retained for internal use, no policy identified for archiving.		

<b>In what STORAGE environment is your superseded data being preserved? (choose all that apply)</b>		
<b>Answer Options</b>	<b>Response Percent</b>	<b>Response Count</b>
Server/ Online storage	77.8%	28
External hard drive	36.1%	13
DVD	27.8%	10
CD	25.0%	9
Tape	22.2%	8
Other	13.9%	5
<i>answered question</i>		<b>36</b>
<i>skipped question</i>		<b>22</b>

<b>How would you best describe ACCESS to your preserved superseded data: (choose one)</b>		
<b>Answer Options</b>	<b>Response Percent</b>	<b>Response Count</b>
Online/ open public access	19.4%	7
Online/ restricted access	5.6%	2
Offline/ by request only	69.4%	25

Media not easily accessible (vault/ dark archives)	8.3%	3
Not Sure	8.3%	3
If multiple, please explain (i.e Orthos: online/ public, Parcel: by request)		4
<b>answered question</b>		<b>36</b>
<b>skipped question</b>		<b>22</b>
<b>If multiple, please explain (i.e Orthos: online/ public, Parcel: by request)</b>		
The items more likely to be requested are kept on our servers where we can readily get at it, the rest is cataloged and archived off-site.		
Shellfishing closures: Online/public; Paper maps: offline/by request; pollution sources: offline/by request		
Inquiry requests and questions to the Survey. We do not have a catalog of data sets online.		
Shellfish Growing Areas- online/public access; Historic maps and pollution sources- offline/by request		

<b>How often do you capture the following geospatial data layers for long term use? (check N/A if your agency does NOT retain historical copies of this data layer)</b>								
<b>Answer Options</b>	<b>Daily</b>	<b>Weekly</b>	<b>Monthly</b>	<b>Quarterly</b>	<b>Semi-annually</b>	<b>Annually</b>	<b>N/A</b>	<b>Response Count</b>
Boundaries: (municipal/ county/ state/ political/ school)	1	0	1	2	1	4	17	26
Elevation: (contours, spot elevation, DEM)	2	0	0	0	1	1	22	26
Digital Orthophotos	1	0	1	0	2	5	17	26
Land Cover	1	0	0	1	0	6	18	26
Hydrological (surface waters, watershed areas, flood zones)	1	0	0	3	2	6	14	26
Address/ Geodetic points	3	0	0	1	1	4	17	26
Parcel/Cadastral/Land Ownership	0	1	0	1	3	3	18	26
Transportation (roads, railroad, airports)	2	0	0	0	1	5	18	26
Utilities (water, sewer, power, etc)	1	0	0	1	0	3	21	26
Societal/ Health (demographics, economic, population, crime, hospitals)	0	0	2	0	0	1	23	26
Biological/ Environmental (park/forest/vegetation info, animal habitat, landfill, Superfund, etc)	2	0	0	4	3	6	11	26
Agricultural	1	0	0	0	0	1	24	26

Geological (bedrock, mineral, soils)	1	0	1	0	1	4	19	26
Others?(please specify)								6
<i>answered question: 26</i> <i>skipped question: 32</i>								
<b>Others?(please specify)</b>								
Not sure.								
Oceanfront Shorelines, Vegetation lines, orthophotography - collect/retain historic data continually								
We capture things based on election and legislative session cycles, rather than a constant time interval.								
Scanned Aerial Photography (some georectified) - Semi-Annually								
for non-dynamic (or linked) GIS data sets								
zoning - semiannually Data is/was collected for six counties (Harnett, Hoke, Cumberland, Richmond, Scotland, Moore) and is labelled systematically. Data collected for a particular project within a 16 county region and does not have any metadata; not very useful for archival purposes. Data now collected for an additional five counties (Sampson, Bladen, Robeson, Lee, Montgomery) in systematic way with metadata.								

How far back do your collections of different superseded geospatial data layers go? (i.e.: Orthos - 15 years, Soils - 5 years, etc.)	
Answer Options	Response Count
	26
<i>answered question</i>	26
<i>skipped question</i>	32
Response Text	
1999 - game lands vector layers and various orthophotography on game lands	
Don't know	
Geodetic control data (1848)	
not sure	
3 years	
1940's to current	
District plans & voter precincts - 10 years	
Some 10 years, Some forever	
orthos (various counties) - 11 yrs / roads - 4 yrs./ municipal boundaries - 19 yrs.	
It varies without any hard and fast rules	
5 years	
We have only heavily implemented GIS for the last 3 years. All data only goes back about that far.	
10	

not sure
5 years
2004 for parcels, latest only for Orthos
Orthophotos go back to the 1950s, geologic maps go back to the 40s, published maps are archived and go back to the 1890s
unknown
Scanned Aerial Photography - 68 years, digitized geology - 23 years, Landslide hazard mapping - 3 years
Shellfish Growing Areas- ~ 5 years in electronic format
Boundaries (property owners) - 1 year. Biological/Environmental (fire perimeters and emergency response datasets) - 5 years.
unknown
varies widely by program - some archive well, some poorly, some not at all
5 years
aerial photos-15+ years roadplans 15+ years
Varies for municipality/county but have some for various years back to 2001. More systematic keeping from 2005 forward muni boundaries, zoning, tjs, streets, cadastral cadastral - for a few towns have 1997-1998

Are stored copies of your geospatial data typically converted into a new format as part of the retention process? (i.e converting Geodatabase to Shapefile)		
Answer Options	Response Percent	Response Count
Yes	32.0%	8
No	60.0%	15
Not sure	8.0%	2
If YES, please explain the FROM and TO formats		7
<i>answered question</i>		25
<i>skipped question</i>		33
If YES, please explain the FROM and TO formats		
shapefile to geodatabase		
Sometimes from ESRI SDE database to ESRI file geodatabase		
archived as shapefile		
Conversion to the newer versions of ArcGIS from ArcView 3.X to 8.1 to 9.1 and 9.2		
coverage, to shapefile, to geodatabase also, reprojected imagery		
coverage, to shapefile, to geodatabase also, reprojected imagery		
geodatabases are not used widely yet, but ArcInfo coverages are often converted to shapefile format		

What type of METADATA records are saved with your superseded geospatial data?		
Answer Options	Response Percent	Response Count
FGDC format	52.0%	13
Locally defined metadata	28.0%	7
NC OneMap metadata starter block	0.0%	0
None	12.0%	3
Not Sure	8.0%	2
<i>answered question</i>		<b>25</b>
<i>skipped question</i>		<b>33</b>

Are updates made to the metadata record once the dataset is set aside for long term retention (to reflect the data's new status as "archived" and/or describe any processing that may have taken place)? (choose one)		
Answer Options	Response Percent	Response Count
YES	12.0%	3
NO	56.0%	14
N/A - Not Sure	32.0%	8
<i>answered question</i>		<b>25</b>
<i>skipped question</i>		<b>33</b>

Does your organization retain DIGITIZED copies of: (check all that apply)		
Answer Options	Response Percent	Response Count
Historic hardcopy maps (scanned only)	20.0%	8
Historic hardcopy maps (scanned and geo-referenced)	22.5%	9
Aerial photos (scanned only)	20.0%	8
Aerial photos (scanned and geo-referenced)	20.0%	8
None of the above	57.5%	23
If YES, Please list any historic maps that have been digitized/ vectorized for analytical purposes.		<b>10</b>
<i>answered question</i>		<b>40</b>
<i>skipped question</i>		<b>18</b>

<b>If YES, Please list any historic maps that have been digitized/ vectorized for analytical purposes.</b>
Ridge Law maps
Digital Raster Graphics
We have some scanned old aerials for later use but have not put them to use yet. Some master plan maps have been scanned to more easily communicate conceptual development areas on modern imagery.
We have scanned copies of our mylar county maps that include geodetic control as well as scanned and geo-referenced copies of the Ridge Law Maps.
We have scanned, and in some cases rectified historical aerial photos of coastal features like inlets and shorelines.
State geologic map -- 1985, earlier maps have been scanned and geo-referenced.
There are far too many to list. We often digitize old geologic maps because this is the only way to analyze them in GIS with modern DOQQs and compare them to current county/local boundaries.
several vintages of geologic maps, 1940 aerial photography in Watauga County, 1951 and 1982 aerial photography in Buncombe County.
mostly geological and geophysical survey maps
Geologic maps of the Deep River basin, NC (Reinemund, J.A., 1955)

<b>Please tell us about any GIS outputs that are being retained by your agency for long term use (i.e. PDF copies of maps associated with a specific project)</b>	
<b>Answer Options</b>	<b>Response Count</b>
	25
<i>answered question</i>	25
<i>skipped question</i>	33
<b>Response Text</b>	
I maintain all the database information, update information and choose what information to keep. I also submit PDF's of maps created to Digital Docs for historical records. Our agency has no plan in place for data conservation as pertaining to GIS	
County and State Boundary surveys	
Shape files specific to project or permitting use.	
pdf maps in basin planning documents	
Oceanfront erosion rate maps	
PDFs of precinct boundary discrepancy areas from cross-agency reconciliation projects.	
site plans, groundwater maps	
N/A	
None.	
None	
Most of DPR's routine small maps are archived as PDFs. Large format maps are sometimes archived.	
We are still collecting data.	
Submitted project files have pdf versions of the final copy.	
N/A	

PDF copies of project deliverables maps are retained.
digital data sets and maps for rules, proclamations, and analyses for reports
Geologic Maps, Landslide Hazard Maps
Most geologic maps are created in GIS but the final mapping is completed in Adobe Illustrator. The landslide hazard maps are usually exported to a PDF.
PDF maps for Wildfire/Hurricane/Emergency response
digital data sets and maps for rules, proclamation, and analyses for reports
PDFs and images (JPG, TIF, etc) are sometimes saved in archived project folders. again, it varies widely by program
None. Unfortunately, GIS little utilized.
Ongoing effort underway to scan all NC Geological Survey Publications and maps.
Keep mxd's and pdf's
Maintain maps created for clients (zoning, downtown revitalization, annexation, land use studies)

How are historic and superseded geospatial data being used in your agency?	
Answer Options	Response Count
	29
<i>answered question</i>	29
<i>skipped question</i>	29
Response Text	
only for record-keeping purposes, no specific use	
I do not save the old data unless I need it once I have updated information	
To support the users of geodetic control, perform state and county boundary surveys, court cases and surveys along the coast dealing with boundary surveys, oyster leases, submerged lands and CAMA activities.	
We use historical aerial photography that we acquire from other agencies to perform change analysis for watersheds.	
Change analysis (impervious cover); also, reference for vested rights, previous application information, etc. with respect to permitting.	
not being used	
analyze change	
For academic purposes by political scientists, for resolution of district and precinct boundary questions, and for integration of past elections results, which are tabulated by superseded precincts, into current geographic base	
utilized rarely	
N/A	
No.	

Not
Some master plan maps have been scanned to more easily communicate conceptual development areas on modern imagery.
We are not using any data yet.
We use historical data to map change over time of coastal features.
N/A
Historical information is used daily to correlated the past knowledge with the current observations.
rarely used for reference
The only reason we would use old data is if it directly related to a specifically dated map release.
Historial aerial photography is used to locate and map landslides. Old geological maps, that were only available in paper copy, are scanned and digitized.
I am currently looking into archiving data for our Shellfish Growing Areas in order to analyze changes in the acreage of closed shellfishing waters over time.
Historical reference.
rarely used for reference
generally only by the programs that created them originally
Not regularly used.
Aerial imagery from the 1950's is frequently used by private consulting firms for land use change applications.
we make use of digitized topographic maps on our mapserver; abandoned well locations and the associated water level data is maintained on our server and available through our webserver and mapserver
Used for planning purposes and trending.
Expect to use these for temporal studies and land use change analyses

<b>Please share any lessons learned/ best practice recommendations or thoughts/ experiences you may have pertaining to the process of retaining superseded geospatial data:</b>	
<b>Answer Options</b>	<b>Response Count</b>
	13
<i>answered question</i>	13
<i>skipped question</i>	45
<b>Response Text</b>	
Difficult to find space to store electronically, revise metadata, and catalog amid demands of daily job duties. However, preserving superseded geospatial data has proved important and useful to our permitting tasks in our section of DWQ.	
Many of the original data sets were filled with errors and omissions that made them misleading so these data sets have never been archived	

Backup data
Of course organization is key. Keeping one central database of what you've got and where you've got it is most helpful in ensuring that your archives have value.
N/A
Derive all useful content from historical sources and put them in digital format for long-term storage. Then you don't have to worry about degradation of originals.
We don't store data we don't create
At some point, certain geospatial data becomes highly complex it must be interpreted by technical persons. With this simplification, the ordinary user will better understand the uncertainty and error in the observations.
Keep lots of lists and update them frequently. If you need historical photograph (aerial) you will have to search for it.
The locations of historical aerial photography are scattered and hard to find. Keeping track of everything we have in our files is necessary so we know what we have, what is out there, and where it is located if we need it.
right now, the process is all over the map (yes, bad pun), and we do need to develop some consistent policies and activities across all business units
Create "readme" files for all scans; include date scanned, resolution, settings, publication series, and any additional info for the metadata.
Took a while to develop a file naming convention that utilized our regular file name structure and included specific file date. When I needed old parcel data for a project discovered most counties had not deliberately kept any old copies for reference but some appeared aware of need to start to do so.

Would you like to be part of any future forums concerning preservation of geospatial data?		
Answer Options	Response Percent	Response Count
YES	55.3%	21
NO	44.7%	17
<i>answered question</i>		<b>38</b>
<i>skipped question</i>		<b>20</b>