



Smithsonian

**Digital Asset Management Plan**

for

\_\_\_\_\_  
Project Name (if this is a Project DAMP)

**NMNH RCIS (EMu) Workflows**

\_\_\_\_\_  
Process/Name of Activity (if this is a General DAMP)

**NMNH**

\_\_\_\_\_  
Unit Name

**Approved by:**

\_\_\_\_\_  
Unit Director (Signature)      Kirk Johnson  
Unit Director (Print Name)      \_\_\_\_\_  
Date

**Additional signatories:**

*For General DAMP:*

Plan Administrator

\_\_\_\_\_  
Signature      NMNH Digitization Steering Committee  
Print Name      \_\_\_\_\_  
Date

*For Project DAMP:*

Plan Administrator

\_\_\_\_\_  
Signature      \_\_\_\_\_  
Print Name      \_\_\_\_\_  
Date

Project Principal Investigator/Lead

\_\_\_\_\_  
Signature      \_\_\_\_\_  
Print Name      \_\_\_\_\_  
Date

# Digital Asset Management Plan

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## Revision History

Version	Date	Pages affected	Description of Change	Author/Reviewer
1.0	7/24/13	All	First Draft	RCIS Data Managers

## 1. EXECUTIVE SUMMARY (MANDATORY)

The Executive Summary provides an “at-a-glance” snapshot of the most important information in the DAMP.

NMNH’s Research and Collections Information System (RCIS, operational since August 2001) is based on a commercial software product for multimedia cataloging: KE Software’s Electronic Museum (EMu). RCIS enables NMNH to manage collections and associated documentation as a whole through desktop processing of transactions relating to acquisitions, loans, borrows, exchanges, and disposals and to generate and store permits, letters, reports, and other forms required by law.

RCIS provides a central repository for myriad data types, most importantly:

- Specimen/sample-level data (catalog and storage data, physical characteristics)
- Collection event/locality data (date, site, geographical location, Geographic Information System (GIS) referencing where available, ecological data from collection notes with look-up to geographical data)
- Biological taxonomy data (the names themselves and their hierarchical relationships, synonymy)
- A thesaurus of culture, artifact, rock, mineral, and gem names (also with associated hierarchical relationships, synonymy)
- Bibliographic and citation data
- Research data (limited but with attributions for the persons who did the work)
- People and organizations data related to any of the above (e.g., researchers, catalogers, authors, collectors, identifiers).
- Genetic sample management including integration with FreezerPro and upcoming Biorepository
- Collections accession data (considered business records and not covered under this DAMP)

### *RCIS provides greater efficiency and accuracy*

RCIS improves collections management by recording information about registration, preservation, storage, and collections documentation activities in a standard, consistent manner; making the information easily accessible; and improving communication about collections internally and externally. RCIS increases productivity by reducing record processing time and reporting on collections transactions. RCIS allows staff to focus on collections

problems that require scientific and technical expertise and knowledge of the collections rather than cumbersome data entry and multiple search tasks.

For a research problem such as developing a biological checklist that requires accessing data from multiple disciplines, a single query could eliminate multiple queries, and result in significant staff time savings per query.

Information gathering required by specimen-based research can now be done in far less time. Once fully implemented, RCIS will save an estimated \$3.5 million to \$4.7 million through conducting research electronically as opposed to paper-based methods.

#### ***RCIS allows for effective collections stewardship***

RCIS is the central electronic repository (known as the “system of record”) for many data types previously maintained in numerous legacy systems (both computerized and manual). RCIS allows for rapid access to shared collections information which improves efficiency and effectiveness of managing exhibition planning and production. RCIS provides ready access to current scholarship, images, and other information to assist in development of intellectual content for exhibitions. The use of RCIS provides significant time savings for staff and curators doing collections based scholarly research; the use of RCIS often minimizes the need to travel to the Museum Support Center (MSC) in Suitland, Maryland to view collections, thus reducing wear and tear on the collections.

#### ***RCIS provides greater understanding of the natural world***

RCIS collections data are linked via their identifications and geography to many other kinds of research data. The links to biochemistry, ecology, physiology, and physical climate provide greater understanding of the natural world. These data are of direct relevance to understanding biodiversity vis-à-vis, how biodiversity has changed recently and over geological time, how humans impact biodiversity, and how biodiversity responds to climate change (and vice versa). Because of the way these links are made, many important questions can be easily answered that otherwise would have been very costly and cumbersome to pursue-and virtually impossible with previous systems. For example, specimens and samples can be linked to the locality data to describe when and where they were collected. Linking data saves staff time and supports confirmation of data.

#### ***RCIS facilitates the diffusion of knowledge***

RCIS allows for NMNH collections to be efficiently used in museum exhibits and provides the ability to make these NMNH exhibits available to the public via the web. Units within NMNH are able to exchange exhibits data with each other by means of RCIS rather than through the use of paper/manual records. This lowers overall data gathering time and reduces staffing costs and increases the efficiency of record keeping.

#### ***RCIS improves collections tracking***

Permits and other forms, reports, and letters are electronically generated through RCIS, resulting in much greater efficiency of staff time. RCIS allows NMNH to maintain full legal and physical control over objects and specimens as required by museum best practices and

Smithsonian Collections Management Policy SD 600. Various tracking and transportation compliance forms that were previously prepared manually are now computerized; computerized form preparation reduces common preparation errors.

#### *RCIS improves collection inventory control practices*

Inventories are completed more reliably and rapidly with RCIS due to the use of authority lists. Authority lists can be easily generated and used; the accuracy of inventories is higher than inventories produced manually. The system ensures 100% compliance with museum best practices on completion of cyclical inventories. For example, automated inventory systems supported a ten-fold increase of objects inventoried per week, with an accuracy rate of 99.99% in one particular unit.

#### *RCIS increases information usage locally and globally*

Through RCIS, NMNH collections data can be shared with national and international colleagues, supporting worldwide research efforts and cutting costs in universities, government agencies, and museums. For example, having electronically available data, such as high resolution images, allows refinement of critical specimen identifications through image sharing. In other cases it facilitates the provision of data to other nations allowing NMNH to meet its collecting agreements.

As the RCIS database grows, it is an increasingly useful reference tool for research scientists throughout the world. RCIS data is used by various U.S. and foreign government and regulatory agencies and non-governmental organizations associated with the use of natural resources (in the U.S. for example, Departments of Commerce and State in interactions with foreign nations, the World Bank, Conservation International, are among those who have requested more ready access to the Smithsonian's data). NMNH and affiliated agency scientists are at the forefront in responding to invasions of non-native species of plants and animals by providing identifications of specimens and performing basic research. NMNH scientists provide the same service in understanding possible vectors for the movement of agents of bio-terrorism. RCIS data is used in policies and in decisions related to climate change, biological diversity, land use, conservation, agriculture, and bio-terrorism, and have a great deal of impact. RCIS facilitates access to collections records thus speeding the process of identifying a specimen accurately, which is a critical step in the mitigation process.

RCIS is invaluable for students at all levels world-wide. As an extended learning tool for students, the links associated with the database will open access to NMNH science. In addition, RCIS allows educators to access collections information online to develop educational materials for K-12, college, and post-graduate students, museum visitors on-site and off, and the public in general.

Similarly, the presence of high quality data is useful for other communication, including print-media and in television.

### *RCIS provides faster service to internal and external “customers”*

RCIS reduces the response time needed to fulfill internal and external information requests. The reduction is directly attributable to the reduction of manual processing of records and the need to search across multiple system platforms and formats.

### *RCIS improves security*

The NMNH RCIS Security Plan was certified and approved in May 2009 per Smithsonian Institution Directive SD IT-930-01. The Security Plan provides confidence that the integrity and security of RCIS electronic information and the supporting information technology infrastructure meets Smithsonian and Federal guidelines. The RCIS Security Plan is essential for creating a trusted environment for NMNH staff and for its customers—scholars and the public. Previous systems did not meet the Smithsonian SD IT-930-01.

## 2. STRATEGIC CONTEXT

The Strategic Context section articulates the significance of the digital assets covered in this plan and how they support unit and pan-institutional goals.

### 2.1 Significance of Digital Assets (MANDATORY)

The 2003 National Research Council study “Funding Smithsonian Scientific Research” captures the unique importance of the NMNH collections, stating that “The collections at NMNH are vastly larger in size and scope than those of any comparable US institution....Its breadth of research mission and the extent of its service to NMNH research community are correspondingly greater. The support and function of an institution the size of NMNH warrant high national priority for collection-based research that is vital to the accomplishments of an international community devoted to the natural sciences.” Recently the academic journal *BioScience* published a paper entitled “New Push to Bring US Biological Collections to the World’s Online Community.” This paper states that “for biologists, the digitization of collections will dramatically improve their ability to understand and protect biodiversity (Baker, 2011).

In addition to the size of its collection, NMNH has the world’s most active natural history museum collection. Each year NMNH acquires approximately 500,000 specimens, disposes approximately 68,000 specimens, loans approximately 170,000 specimens, and borrows approximately 327,000 specimens. In FY 2002, loans went to all US states and territories and to over 100 foreign countries. Specimens included in these transactions required filing permits with the US Fish and Wildlife Service and other US Government agencies.

In particular, the digital records of NMNH collections are essential to the care and accessibility of the collections. The digital records are used in inventory control and tracking, provide data for research, and support public outreach.

**2.2 Relevance to Unit/SI Strategic Plans (MANDATORY)**

**2.2.1. How do the digital assets represented in this DAMP support your unit’s strategic plan?**

Goal 1 of the NMNH Strategic Plan 2010-2015, calls for digitization of collections relevant to addressing major scientific questions and to broaden access to our information for scientists, decision makers and the public at large.

The digital assets mentioned in this DAMP are the result of the tasks set forth to accomplish this goal: Build and improve stewardship and accessibility of collections, including:

- Augment the digital collections records for primary type specimens to contain appropriate imagery and geo-referenced data.
- Digitize collections of national significance and make them available online.
- Create a virtual natural history collection on the Web, including objects on display in our exhibitions, in support of education programs

<p><b><i>Explore and Interpret Nature and Culture</i></b></p>	<p>Creation of digital collections records of national significance and making them available online so anyone can explore and interpret nature and culture.</p>
<p><b><i>Inspire Public Appreciation and Engagement with Science and the Natural World</i></b></p>	<p>Digitized collections data supports NMNH's educational and programmatical goals; the increased presence of digital data online will encourage new and repeat visitors to the NMNH Web sites.</p>
<p><b><i>Priority Initiatives</i></b></p>	<p>Digitized collections data will enable development and add dimension to the NMNH's initiatives</p>
<p><b><i>Enhance Effective Operations and Partnerships</i></b></p>	<p>By giving staff the tools and training to effectively digitize and image type specimens, staff will be best-equipped to meet the NMNH shared goals.</p>
<p><b><i>Leverage and Diversify Funding and Resources</i></b></p>	<p>Increased online digital records with images increases NMNH leveraging power when pursuing internal and external funding and partnerships.</p>

## 2.2.2 How do they build on the following key goals in the Smithsonian's [Digitization Strategic Plan 2010-2015](#) in terms of digitization?

### **Strengthening Collections:**

Digitizing specimen records increases the use and exchange of digital collection data both internally and externally. Every image migrated or created will be accessible online through EMu Web and the SI Collections Search Center. Collections that may have languished due to infrequent use become more accessible through enhanced specimen records. Specimen images add another dimension of usability that textual data cannot provide.

### **Excellent Research:**

Easily-accessed, imaged specimens facilitate richer datasets for research and increase the potential for the data to be analyzed in novel ways. The potential of more internal/external and public/private collaborations increases.

### **Broadening Access:**

Digitizing specimen records increases NMNH data accessibility and supports on-going digitization efforts.

### **Crossing Boundaries:**

Including images with specimens increases the potential for specimen data to be analyzed in novel ways.

### **Revitalizing Education:**

Investing in digitizing specimen records and imaging results in making NMNH collections viewable anywhere with an internet connection.

### **Enabling the SI Mission through Organizational Excellence:**

Less staff time is used managing miscellaneous images saved in many different formats. Less staff time will be used on tracking down specimens to answer inquiries because a specimen image will be readily available.

## 2.3 Relevance to Unit Digitization Plans (MANDATORY IF APPLICABLE)

Yes. Many of the digitization goals listed in the NMNH UDP are collections based and will be entered into the NMNH Research Collections Information System (RCIS): EMu.

## 2.4 Reference to Funder DAMPs (RECOMMENDED)

### 2.4.1 Are the digital assets described in this DAMP part of a project, program, or activity that was funded by external grants?

Yes \_\_\_ (proceed to 2.4.2)

No \_\_\_ (proceed to 2.5)

Not applicable (if this is a General DAMP)  (proceed to 2.5)



**2.4.2 Does the funder require a DAMP (often referred to as “data management plans” by funding organizations) as a condition of funding?**

Yes \_\_\_ (proceed to 2.4.3)

No \_\_\_ (proceed to 2.5)

**2.4.3 Does the funder require that its DAMP be submitted in a specific format?**

Yes \_\_\_ (proceed to 2.4.4)

No \_\_\_ (proceed to 2.5)

**2.4.4 Provide a link to the funder’s DAMP form/instructions and the unit’s DAMP submission to the funding agency below.** If the latter is not available online, identify who can be contacted for further information on the unit’s DAMP submission:

Funder DAMP form/instructions (URL) \_\_\_\_\_

Unit’s DAMP submission to funding agency (URL or contact person) \_\_\_\_\_

## **2.5 References to Project Management Plan or Other Documentation (RECOMMENDED)**

NMNH Informatics Overview Document:

[http://darwin.si.edu/about/Information%20Technology%20Document/Informatics\\_Overview\\_V3\\_8Mar2013.pdf](http://darwin.si.edu/about/Information%20Technology%20Document/Informatics_Overview_V3_8Mar2013.pdf)

NMNH RCIS Plans of Actions and Milestones (POA&Ms): available from Thomas Orrell

### 3. DAMP DEFINITION & SCOPE

The DAMP Definition and Scope section clarifies the specific digital assets that are covered under this DAMP and the relevant project, program or activity that collected or generated these assets.

#### 3.1 Brief Project Summary (MANDATORY IF APPLICABLE)

General DAMP.

#### 3.2 Description of the Digital Aspect/Component in the Context of the Larger Project (MANDATORY IF APPLICABLE)

General DAMP.

#### 3.3 DAMP Scope (MANDATORY)

This DAMP covers all routine collections management and digitization in our Unit. Among the ongoing activities that contribute to routine digitization are the following: collections management, inventory control, locations management, pest management, tissues management, preservation and conservation issues, literature and manuscripts, narratives, and multimedia.

#### 3.4 Categories and Volume of Assets (MANDATORY)

##### 3.4.1 Category of Assets

- Digital descriptive records. Descriptive Records include significant metadata from the specimen(s) describing the contents of the collection at different levels depending on the Inventory they are included in: Type Specimens, Specimens/Lots, Taxonomic Lots, and Genetic Samples. They also include information describing Preservation and Conservation issues, Location, Pest Management, etc.
- Digital surrogates of specimens/objects Digital Surrogate Records represent objects (= Specimens/Lots) in the collections in the form of multimedia files depending on the object (images, audio, video, text)
- Ancillary collection items such as field notebooks, artwork, and locality records
- Supporting documents, data sets, maps, etc.

##### 3.4.2 Volume of Assets

See CDRS for detailed accounting.

### 3.5 Owner of Digital Assets (MANDATORY)

With limited exceptions, all content is considered to be owned by the NMNH Department(s) responsible for the stewardship of the materials, specimens and objects the records represent. Exceptions, which are noted in the RCIS, include manuscripts, illustrations, descriptive and surrogates records from non-SI museums and reference multimedia.

### 3.6 Owner of the Intellectual Property Rights of the Digital Assets (MANDATORY)

With limited exceptions, all intellectual property rights are considered to lie with the NMNH Department(s) responsible for the stewardship of the materials, specimens and objects the records represent. Exceptions, which are noted in the RCIS, include manuscripts, illustrations, descriptive and surrogates records from non-SI museums and reference multimedia.

## 4. ASSET DESCRIPTION: METADATA & CONTENT

The Asset Description section identifies how the digital assets are collected, described, and processed so they can be accurately used, analyzed and shared.

### 4.1 Metadata Standards (Descriptive & Technical; Data Structure & Data Value) (MANDATORY)

The standards used by NMNH RCIS include:

EMu Catalog Standards:

- Darwin Core (DwC)
- Biodiversity Information Standards (TDWG)
- Distributed Generic Information Retrieval (DiGIR)
- Unicode Standard (Unicode 5.2.0)

EMu Multimedia Standards:

- Basic Guidelines for Minimal Descriptive Embedded Metadata in Digital Images (Embedded Metadata Working Group, Smithsonian Institution)
- File Nomenclature Schemas (NMNH Informatics)
- Image Capture Format Quality Standards (NMNH Informatics)
- File Nomenclature Schemas (NMNH Informatics)
- Adobe Digital Negative Format Standard (DNG)
- TIF Image Format standard
- JPEG Format Standard,
- IPTC Metadata Format Standard
- Exif Metadata Standard

In addition, each Research and Collections department within NMNH has discipline specific data and multimedia standards for their records.

Also in limited use at NMNH:

- FADGI (Federal Agencies Digitization Guidelines Initiative)
- FADGI (Federal Agencies Digitization Guidelines Initiative)

## 4.2 Characterization of the Digital Assets' Formats (MANDATORY)

### 4.2.1 Digital Assets Covered Under this DAMP

Database	texpress
Image files	tiff, (tif), jpg (jpeg), DNG, bmp, gif, png
Text files	PDF, txt, rtf, doc, etc.
Audio files	wav, mp3
Video files	mp4, mpeg, mpg, QuickTime,
Spreadsheet	xls, xlsx

### 4.2.2 Calibration and Processing Activities

The RCIS does not transform or alter content during ingest.

### 4.2.3 Capture or Collection of Digital Assets

Descriptive records are entered into the RCIS either directly through the production client interface, or via the import tool (using CSV or XML files). Multimedia is usually stored temporarily on the Media Staging Area (a NMNH NAS) for organization and preparation for ingest into the RCIS. Multimedia can be added asset by asset via the production client interface, or facilitated by the import tool (CSV/XML file with pointers to asset storage location on MeSA).

For more information about MeSA:

<http://darwin.si.edu/about/Pages/multimediamanagement.aspx>

## 4.3 Interdependencies Among Assets (RECOMMENDED)

The RCIS is a database, so the relationships, links and references to data elements must be preserved.

The primary/master/original version of images that are managed by the NMNH RCIS are remotely stored in the SI DAMS. RCIS serves as the primary interface for accessing these image files, which requires the connection between the two systems to be active. See [Informatics Overview](#) document for further details.

## 4.4 Provenance/ Authenticity of the Data (RECOMMENDED)

- User authentication via ActiveDirectory
- Detailed audit trails
- No external systems can edit RCIS content

## 5. ASSET USAGE GOALS

The Asset Usage Goals section clarifies who will use these digital assets and for what purposes. Clarifying this information helps ensure that care and management of the assets is accomplished in a way that meets the digital asset needs of these audiences.

### 5.1 Target Audiences and Uses (MANDATORY)

Target Audiences/Users	Primary uses
Collections Managers	Collections management
Biorepository Managers	Genetic Samples management
Collections Managers and Exhibits	Location management
Collections Managers and Operations Staff	Pest management
Conservators	Documentation of conservation projects
Office of Exhibits	Develop and manage materials
Education & Outreach	Develop and manage materials
General Public	Web access to collections
Students and researchers	Research and education

### 5.2 Potential Audiences and Uses (RECOMMENDED)

### 5.3 Interoperability Expectations (MANDATORY)

- The master multimedia file is stored in the SI DAMS through a connection with the NMNH RCIS. If the connection is lost, or unavailable, the master file is inaccessible.
- FreezerPro. When Genetic Samples are present a link is established between NMNH RCIS and the Biorepository's management system FreezerPro.
- The data must be usable in various data sharing platforms (GBIF, VertNet, RRN, EOL, GGN, etc). To ensure this, we have created custom crosswalks across these systems.
- The data must be available to the SI Cross Search service (EDAN). To ensure this, we have created a custom XML output using the EDAN Metadata Model crosswalked by each NMNH department.

## 6. POLICIES

The Policies section identifies the availability of your assets and the impact your policies have on data sharing. These policies are foundational to data integration, preservation, and access in the future.

### 6.1 Policies for Asset Access (MANDATORY)

- We make our content available in accordance with the Collections Management Policy: [http://darwin.si.edu/about/Collections%20Program/NMNH\\_Colls\\_Mgmt\\_Policy\\_April\\_2012.pdf](http://darwin.si.edu/about/Collections%20Program/NMNH_Colls_Mgmt_Policy_April_2012.pdf)
- NMNH Terms of Use: [http://www.mnh.si.edu/rc/db/2data\\_access\\_policy.html](http://www.mnh.si.edu/rc/db/2data_access_policy.html)

### 6.2 Restricted Digital Assets (MANDATORY)

#### 6.2.1 Most Applicable Restrictions

##### SD609 Allowable Restrictions

Legal Restrictions – Intellectual Property	
Copyright	X
Moral Rights	
Trademark	
Patent	
Privacy Rights	X
Publicity Rights	X
Personal Identifiable Information (PII)	X

Legal Restrictions – Other	
Contractual restrictions	
Native American & Hawaiian human remains & sacred objects	X
Cultural object repatriation (due to illegal acquisition)	X
Endangered species	X
Asset reveals location of archeological, paleontological, geological, sacred or historic site	X
Uncertain provenance and export records (e.g., Holocaust era)	X
Conservation, management, inventory, valuation, other business records not covered by SD 609	X

Policy Restrictions	
Sensitive content	X
Unpublished research data/resources	X
Resource limitations in unit	X
Commercial use	X

In your estimation, what percentage of the digital assets in this DAMP fall under SD609 restrictions?	4%
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### 6.2.2 Additional Restrictions

See National Park Service – Smithsonian Institution Collections Agreement:  
[http://darwin.si.edu/about/Collections%20Program/NPS\\_SI\\_4\\_2012.pdf](http://darwin.si.edu/about/Collections%20Program/NPS_SI_4_2012.pdf)

### 6.3 Digital Assets NOT Owned by SI (MANDATORY IF APPLICABLE)

The RCIS database has a series of flags that can be set for each record and/or attached multimedia file indicating the availability for sharing. These flags include a y/n for intranet access, and a y/n flag for internet access. Depending on the agreement with the non-SI owner, the NMNH RCIS can restrict just the public, but allow NMNH users; or it can restrict all NMNH staff outside of the permitted department.

### 6.4 Other Policies Affecting Digital Assets (RECOMMENDED)

### 6.5 Dissemination Delays (embargoes) (MANDATORY)

As permitted in SD 609, public access to unpublished manuscripts or genetic samples may be delayed. Manuscripts entered into the RCIS are by departmental convention, automatically flagged to restrict access. Genetic samples are flagged by researcher request, and are handled by a case by case basis by the department data manager(s) responsible for the specimen and genetic sample.

### 6.6 Attribution (MANDATORY)

- See NMNH Terms of Use: [http://www.mnh.si.edu/rc/db/2data\\_access\\_policy.html](http://www.mnh.si.edu/rc/db/2data_access_policy.html)

### 6.7 External Funder Policies (MANDATORY IF APPLICABLE)

N/A

### 6.8 Memoranda of Understanding or Other Partnership Agreements (MANDATORY IF APPLICABLE)

Available from Carol Butler:

- National Park Service – Smithsonian Institution Collections Agreement

Available from Wendy Wiswall:

- All allied agencies MOUs (including USDA, USGS, NOAA, RRN)
- Antarctic Meteorite Program (Smithsonian, NASA, NSF)

## 6.9 Project or Program Completion (RECOMMENDED)

The NMNH RCIS manages national collections, which are managed in perpetuity. NMNH does not foresee and end to this program. If a new RCIS is selected, all EMu data products, links, associations, multimedia, etc. will be converted into the new system.

## 6.10 Digital Asset Ownership Reassignment (RECOMMENDED)

If, oddly, NMNH no longer was the steward of the national natural history collections data, ownership of the RCIS content would transfer to the Smithsonian. If the Smithsonian was unable to manage the RCIS data, it would become the responsibility of the National Archives.

# 7. LIFE CYCLE MANAGEMENT

The Life Cycle Management section clarifies how the unit stewards its digital assets to ensure these assets are appropriately created and cared for through their intended lifespan. Proper stewardship ensures that digital assets will not be “orphaned” or compromised in a way that results in data loss.

## 7.1 Designated Steward of the Digital Assets (MANDATORY)

- Ex officio: NMNH Department Data Managers

## 7.2 Roles and Responsibilities for Managing the Digital Assets (MANDATORY)

The acquisition and possession of collections impose legal and ethical obligations to provide proper management, preservation, and use of the collections and their associated information. Authorities and responsibilities for collections management at the NMNH are subordinate to the authorities and responsibilities at the Institution level, as defined in *SD 600* and its associated *Implementation Manual*.

NMNH recognizes that collections stewardship requires significant resources. As such, the standards expressed in this policy may present unfunded mandates to units within the museum. In these cases the Director and designee(s) will work with the units to establish and act upon priorities, as needed.

NMNH collections management authorities and responsibilities are delegated as follows:

The **Director** is responsible for:

- Museum policy guidance, program direction and planning, and budget support to carry out the collections management requirements established in this document.



- Designating authorized collecting units and assigning authority to acquire and manage collections.
- Final approval authority for all collections management policies and procedures, and approving exceptions to these policies and procedures.
- Delegating authority for the establishment, review and revision of collecting unit collections management policies and procedures.
- Delegating authority for collections management activities to the appropriate staff, in order to fulfill all staff responsibilities as defined in this policy.
- Developing and implementing a long-term collections plan that provides a framework for making collection development, acquisition, management, and disposals decisions.
- Requiring that each collecting unit develop a collections plan for review and approval by the Director for incorporation into the museum's collections plan.
- Approving proposed collecting priorities to guide the development of collections per the approved collections plan including reasonable resource need projections, and reviewing those priorities on a regular basis.
- Assuring compliance with *SD 600*, the *SD 600 Implementation Manual* and NMNH's collections management policy, including approval and submission of reports as required.
- Assuring compliance with any policies related to collections specified in bylaws of the NMNH Advisory Board or by the Board of Regents.
- Establishing performance measures for monitoring and reporting progress towards implementation of collections management standards.
- Ensuring NMNH strategic plans include collections-specific elements with performance measures, targets, and timelines.
- Approving the appointment of a representative Collections Committee with responsibility to advise the Director or designee on collections issues.
- Aligning training of unit collections staff with the requirements of unit strategic plans, professional standards, job descriptions, delegated authority, and assigned responsibilities.

The **Associate Director for Science (ADS)** is responsible for the following, as well as for any of the above functions that may be delegated by the Director:

- Recommending units for collecting unit authorization to the Director, and assigning responsibility and authority for collecting.
- Review of all collecting unit collections management policies and procedures, providing recommendations to Director for final approval.
- Reviewing all the specific delegation of collections responsibility to the appropriate staff, in order to fulfill all staff responsibilities defined in this policy.
- Advising each unit on its proposed Collections Plan for review and approval by the Director.
- Reviewing proposed collecting priorities to guide the development of each collection under the NMNH Collections Plan as it is developed, with reasonable resource needs projections, and submitting those to the Director for review and approval.

- Assuring compliance with *SD 600*, the *SD Implementation Manual*, and NMNH and any collecting unit collections management policies and procedures.
- Assuring compliance with any directives related to collections specified in bylaws of the NMNH Advisory Board by the Board of Regents, through approval of reports for the Director's review.
- Recommending a representative Collections Committee with responsibility to advise the ADS and Director on collections issues.
- Recommending a representative Genetic Resources Oversight committee with responsibility to advise the ADS and Director on central genetic resources collection issues.
- Reviewing reports from the unit's chairs on the actions of Collections Advisory Committees in each collecting unit.
- Providing policy guidance, program direction and planning, and budget support to carry out the collections management requirements established in this policy.
- Reviewing and approving department collections procedures.
- Ensuring that collections responsibilities are reflected in annual performance plans.
- Ensuring, through coordination by the Collecting Unit leadership and the Chief of Collections, all staff have current training regarding laws and regulations affecting the acquisition, disposal, import, export, and transport of collections.

The **Chief of Collections** is responsible for the following, as well as for any functions that may be delegated by the ADS and/or the Director:

- Assisting the ADS and Director in the establishment, implementation, review, and revision of NMNH's collections management policy.
- Advising and assisting collecting units to develop, implement and revise museum and unit collections management policies and procedures.
- Maintaining copies of all collecting unit collection management policies and procedures.
- Advising collecting units, ADS, and Director on issues of compliance with collecting unit, NMNH, and Smithsonian policy mandates.
- Advising collecting units, ADS, and Director on legal, ethical and procedural requirements affecting NMNH and its collecting units.
- Working with each unit to develop the NMNH Collections Plan for review by the ADS.
- Providing guidance on proposed collecting priorities under each unit's collecting plan and reasonable resource projections, and reviewing those priorities at least every two years.
- Monitoring and documenting compliance with *SD 600*, the *SD 600 Implementation Manual*, and NMNH and collecting unit collections management policies, through preparation and approval of reports for the ADS's and Director's review, including annual reports on collections use and transactions.
- Monitoring and documenting compliance with any directives related to collections specified in bylaws of the NMNH Advisory Board or by the Board of Regents.
- Maintaining and overseeing permanent documentation of all collections transactions.
- Establishing documentation requirements for NMNH collections activities.

- Advising the ADS and Director on appropriate authorizations regarding collections management activities, and maintaining records on authorities on behalf of the museum.
- Working with the Assistant Director for Information Technology on information management systems and access to collections information.
- Responding to the Office of the Inspector General (OIG) on audits related to collections and collections activities.

The **Office of the Registrar** is responsible for the following:

- Serving as the record-keeper of collections transactions, and associated records that document decisions and collections related activities.
- Implementing collections-related decisions made by the Chief of Collections regarding collections transactions.
- Assisting with the review of legal, policy, and ethical issues and exploration of options, supporting the departments in their collections work.
- Leading development and maintenance of automated transaction management systems.
- Managing specific aspects of transactions, including insurance, and coordinating with other offices as needed.
- Leading cyclical inventories and maintaining the museum's records of its inventories.
- Holding records of past audits and museum accreditation.
- Managing museum-level permits for acquisition, possession, or transport of items.
- Reviewing documentation of all acquisitions, accessions, disposals, deaccessions, and loans.

The **Chairs/Heads of Collecting Units** are responsible for the following:

- Directing the establishment, implementation, review and revisions of the unit collections management policy.
- Delegating and overseeing implementation of the specific delegation of collections responsibility to the appropriate unit staff in order to fulfill all collections management policy requirements.
- Appointing at least one Collections Advisory Committee for the unit, including representation by scientists and collections managers, and defining its role.
- Reporting to the ADS on the actions of the unit's Collections Advisory Committee(s).
- Developing and approving the unit's collection's plan for review by the ADS.
- Assuring unit compliance with collecting unit, NMNH, and Smithsonian collections management policies, and reporting on compliance to the ADS.
- Recommending a representative to NMNH's Collections Committee that has responsibility to advise the ADS and Director on collection issues.
- Providing unit policy guidance, program direction and planning, and budget support to carry out the collections management responsibilities of the collecting unit in accordance with established policy.

- Ensuring that collections-related responsibilities are reflected in annual performance plans.
- Ensuring that staff members receive regular training necessary to perform their collections stewardship duties.

The **Collections Managers** of collecting units are responsible for the following:

- Contributing to the establishment, implementation, review and revisions of the unit collections management policy.
- Assigning delegated collections responsibility from the Unit Chair to the appropriate unit staff.
- Supervise collections management staff ensuring adherence to policy mandates, strategic collection goals, and professional practices.
- Serving on at least one Collections Advisory Committee for the unit.
- Contributing to the unit's collections plan for review by the ADS.
- Contributing to development and implementation of the unit's collections plan for review by the Unit Chair.
- Contributing to the development of proposed priorities to guide the unit's collections plan for approval by the Unit Chair.
- Assuring unit collections management activities are conducted in compliance with collecting unit, NMNH, and Smithsonian policy requirements, and reporting compliance to Unit Chair.
- Recommending to the Unit Chair a representative to the NMNH Collections Committee.
- Requesting for unit policy guidance, program direction and planning, and budget support to carry out the collections management responsibilities established in this document.
- Working with the Office of the Registrar to document collections transactions according to policy and OR requirements.
- Providing direct physical care, preservation and access for collections as well as for professional handling of collections that ensure their safety and security, including genetic resources maintained at NMNH facilities.

The **Assistant Director for Information Technology** is responsible for the following:

- Working with the Chief of Collections and Office of the Registrar staff, develop and maintain the museum's automated collections transaction system.
- Working with the Chief of Collections, the ADS, and the Collecting Units, develop and maintain collections information systems that support collections control and accessibility, ensuring collections information security.
- Developing and maintaining the museum's Data Access Policy, and providing information per its terms as requested.
- Providing public access to collections data through collections information systems.

The **Head of Informatics** is responsible for the following (relating to RCIS):

- Managing the RCIS Program and related programs at NMNH

- Managing the implementation of RCIS projects and associated staff
- Contract management
- Preparation of OMB 300 documentation
- Participation in FISMA process and ensuring NMNH RCIS gains annual certification
- Administers financial and scheduling aspects for the Informatics office.

The **Systems Planner** is responsible for the following:

- Overseeing deployment and implementation of Informatics projects.
- Reviews and approves all design changes or modifications
- Ensures systems design and availability
- Develops and maintains project related documentation
- Ensures adherence to SI policies for IT projects

The **Database Administrator** is responsible for the following:

- Administration of DBMS systems
- Monitoring of systems

The **Systems Analyst** is responsible for the following:

- Enhancement of the integrated transaction functionality within the NMNH RCIS
- Provides deployment and implementation expertise
- Designs, implements and maintains web access to RCIS systems data

The **EMu Helpdesk Manager** is responsible for the following:

- Developing and maintaining RCIS user documentation
- Conducting RCIS user training
- Testing of RCIS systems
- Responding to RCIS helpdesk requests and reports

The **System Administrator** is responsible for the following:

- Acting as the Information System Security Officer
- Providing operation systems support
- Ensuring the RCIS systems are backed up
- Managing server accounts and controlling access

The **IT Security Manager** is responsible for the following:

- Acting as the NMNH ITO Security Officer

The **Multimedia Specialist** is responsible for the following:

- Providing multimedia support relating to RCIS assets
- Enhancement of the integration of the NMNH RCIS and the SI DAMS
- Providing access to the Media Staging Area (MeSA) and managing user documentation
- Ensuring NMNH RCIS content is provided to the SI Collections Search (EDAN)

The **EMu Support Specialist** is responsible for the following:

- Data migration and customization
- Web presentation of RCIS content

The **Implementation Contractors** are responsible for the following:

- Acting as the Project Manager for KE Software and coordinating all work done for NMNH by KE
- Working with Informatics Office on design, planning and implementation of RCIS systems
- Installation, implementation and testing of RCIS systems
- Maintenance and support of the production RCIS system

The **Project Support Contractor** is responsible for the following:

- Acting as project manager, technical writer and systems developer for select Informatics projects
- Acts as technical liaison and subject matter expert

**Collections Advisory Committees** are unit-specific bodies, with representation by scientists, collections managers, and/or educators in the unit, charged with advising the Chair or unit leadership on issues concerning proposed collections acquisitions, loans, borrows and deaccessions, as well as overall collections policy and procedure issues for the unit.

The **NMNH Collections Committee** is a museum-wide committee with representation from each collecting unit and NMNH facility, charged with advising the ADS and Director on larger issues of collections policy.

The **Associate Director for Public Engagement** is responsible for ensuring that collections made or acquired by Office of Education and Outreach staff conform to this policy.

**All staff members, as well as affiliated agency staff officially stationed at NMNH, volunteers, interns, fellows, contractors, and others with delegated collections management responsibilities or access to collections** are responsible for carrying out their delegated collections management responsibilities to ensure the following:

- Implementation of established collections management policies and procedures.
- Adherence to applicable professional ethics and practices.
- Proper management, preservation, and use of collections.
- The integrity and accuracy of collections information.

**Central Smithsonian offices**, such as the Office of the Deputy Under Secretary for Collections and Interdisciplinary Support, National Collections Program, Office of General Counsel, Office of the Inspector General, Office of Protection Services, Office of Safety and Environmental Management, and the Office of the Treasurer's Division of Risk Management, provide

collections management service oversight to NMNH, as specified in *SD 600* and the *SD 600 Implementation Manual*.

### 7.3 Data Storage Environments and Physical Locations (MANDATORY)

#### 7.3.1 SI/Unit Data Storage Environments and Physical Locations

Media Staging Area 'MeSA' (NHMH NAS)	OCIO Herndon Data Center
RSCIS Database Server	OCIO Herndon Data Center
RCIS Storage Array	OCIO Herndon Data Center
RCIS Web Database Server	OCIO Herndon Data Center
RSCIS Web Content Server	OCIO Herndon Data Center
SI DAMS Database Server	OCIO Herndon Data Center
SI DAMS Storage Array	OCIO Herndon Data Center

#### 7.3.2 Non-centrally Supported Storage Systems

Once content is in the NMNH RCIS, it is centrally supported.

### 7.4 Disaster Recovery Plan (MANDATORY IF APPLICABLE)

Centrally supported.

### 7.5 Plan for Securing SI-sensitive or Personally Identifiable Information (PII) (MANDATORY IF APPLICABLE)

N/A

### 7.6 Risk Assessment (RECOMMENDED)

- Potential loss of data during conversion to new database
- EMP wipes out all DC area servers and backups
- Catastrophic server failure and lack of mirrored production environment
- Delay between small erroneous edits to data records and their discovery

Additional known project-related risks and risk management alternatives are found in the NMNH RCIS Plans of Actions and Milestones (POA&Ms) which are kept current by the Informatics Branch. The Informatics Branch maintains this document and files quarterly updates with the Smithsonian's Office of the Chief Information Officer. Contact: Thomas Orrell.

## 7.7 Intended Lifespan for Digital Assets (MANDATORY)

The NMNH RCIS is the system of record. All content is intended to be maintained indefinitely.

## 7.8 Reporting Requirements on the Data (Internal and External) (RECOMMENDED)

### 7.8.1 Internal

- Digitization Assessment via CDRS
- Digitization Statistics via CDRS
- Collections report for CCPF
- CIS IRM Pool

### 7.8.2 External

Ad hoc information requests from Congress.

## 8. TECHNICAL ENVIRONMENT

The Technical Environment section identifies the technical requirements needed to support the digital assets covered in this plan. Clarifying these requirements ensures that the digital assets will have an adequate technical environment into the future as the number of assets grows or the assets continue to be used.

## 8.1 Storage Requirements (MANDATORY)

### 8.1.1 Short Term Storage Requirements

Note: There is no “short term” collections management. These figures represent the current storage footprints, with expected growth figures available in the NMNH UDP.

Type of Storage	Quantity (terabytes, petabytes, etc.)	Storage Location
Media Staging Area 'MeSA' (NHMH NAS)	Current capacity is 60TB	OCIO Herndon Data Center
RSCIS Database Server	1.5 TB	OCIO Herndon Data Center
RCIS Storage Array	6.1 TB	OCIO Herndon Data Center
RCIS Web Database Server	1.2 TB	OCIO Herndon Data Center
SI DAMS Database Server	Available from OCIO	OCIO Herndon Data Center
SI DAMS Storage Array	Available from OCIO	OCIO Herndon Data Center
SI EDAN Apache SOLR Server (EDAN)	Available from OCIO	OCIO Herndon Data Center



### 8.1.2 Post-project Storage Requirements

N/A

## 8.2 Non-centrally Supported Hardware and Software Tools (MANDATORY IF APPLICABLE)

### 8.2.1 Non-centrally Supported Hardware and Software

No non-centrally supported hardware or software.

### 8.2.2 Hardware and Software Not Under Service Contracts

No.

## 8.3 External Maintenance Contracts (RECOMMENDED)

Contract support with RCIS software company, KE Software. Headquarters in Melbourne, Australia.

## 9. DAMP ADMINISTRATION

The DAMP Administration section offers logistics about this DAMP, such who is responsible for this DAMP's maintenance and administration, and provides the DPO with a single point of contact as it coordinates various pan-Institutional and unit digitization pursuits.

### 9.1 Plan Maintenance (MANDATORY)

#### 9.1.1 Plan Creators

- Carrie Beauchamp, NMNH Department of Anthropology Data Manager, Museum Specialist
- Patricia Gentili-Poole, Department of Entomology Data Manager, Museum Specialist
- Kathy Hollis, NMNH Department of Paleobiology Data Manager, Museum Specialist
- Deborah Hull-Walski, NMNH Education & Outreach Data Manager (on detail from NMNH Department of Anthropology), Museum Specialist
- Craig Ludwig, NMNH Department of Vertebrate Zoology (Divisions of Mammals and Birds) Data Manager, Museum Specialist
- Adam Mansur, NMNH Department of Mineral Sciences Data Manager, Museum Specialist
- Sylvia Orli, NMNH Department of Botany Data Manager, Museum Specialist
- Diane Pitassy, NMNH Department of Vertebrate Zoology (Division of Fishes) Data Manager, Museum Specialist

- Kenneth Tighe, NMNH Department of Vertebrate Zoology (Division of Herpetology) Data Manager, Museum Specialist
- Linda Ward, NMNH Department of Invertebrate Zoology Data Manager, Museum Specialist
- Rebecca Snyder, NMNH Information Technology (Informatics Branch), Digital Media Specialist

### **9.1.2 Plan Administrator**

- NMNH Digitization Steering Committee (DigiComm)

### **9.1.3 Unit DAMP Coordinator**

- Rebecca Snyder, Digital Media Specialist

### **9.1.4 Principal Investigator or Project Lead**

*For Project DAMPs only: Who is the project Principal Investigator or Project Lead?*

N/A

### **9.1.5 DAMP Review**

- Next mandatory review by: 08/01/2016

## **9.2 DAMP Development Process (RECOMMENDED)**

DigiComm assigned a DAMP Coordinator to work with the assigned Plan Creators. Group met June 19<sup>th</sup>, 2013 in person to create working draft. Working draft was distributed to Plan Creators, who continued writing via email. Updates were sent to DAMP Coordinator who provided feedback to Plan Creators. DAMP submitted to DigiComm for vetting and approval. Once completed, DigiComm passed DAMP to Unit Director for official approval and signature. Signed Plans uploaded by Unit DAMP Coordinator for upload to DPO DAMP SharePoint site.