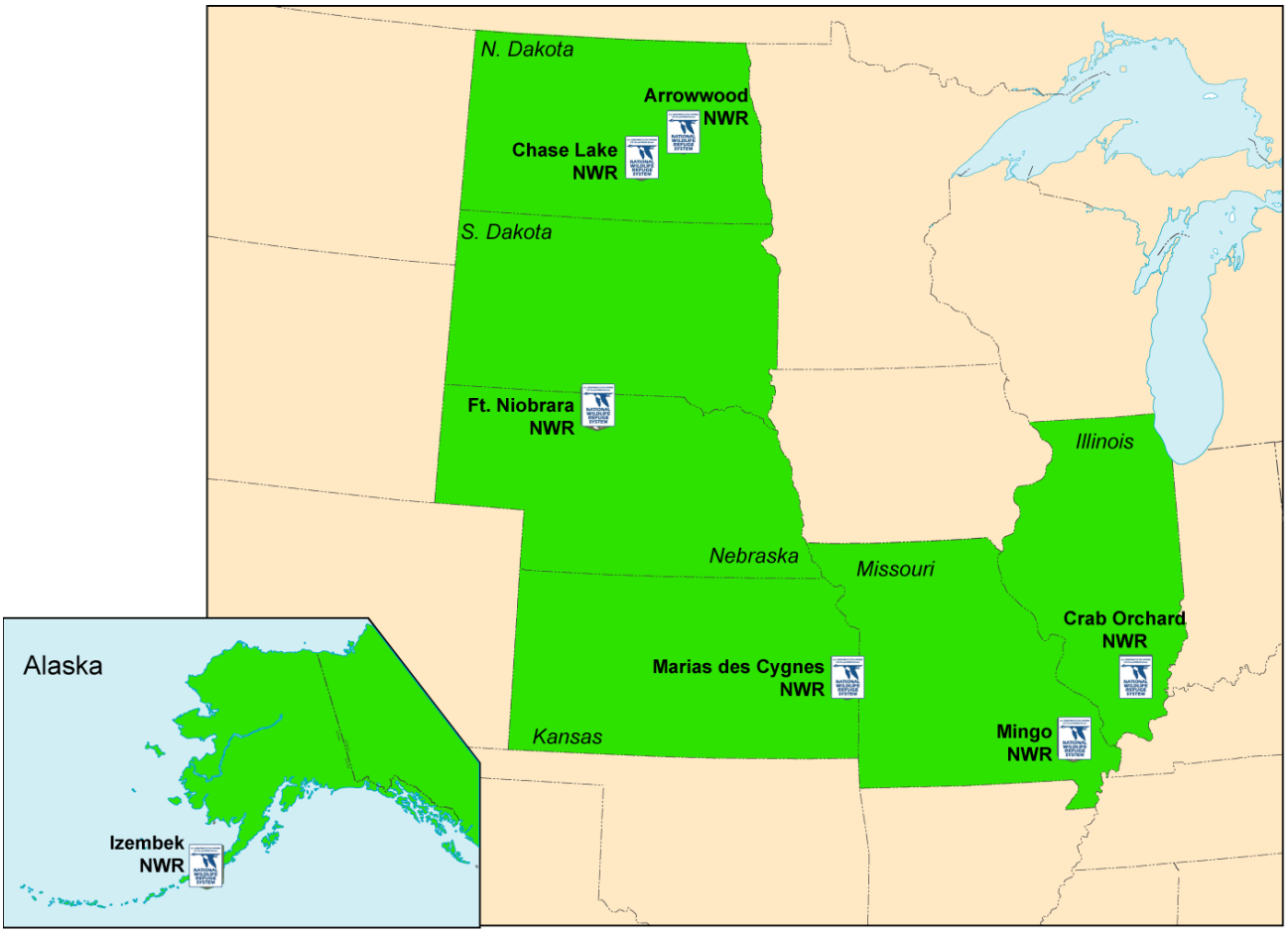
An Assessment of Museum Property at Select National Wildlife Refuges for the U.S. Fish and Wildlife Service



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Technical Report No. 32
May 2007

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Mandatory Center of Expertise for the Curation and Management of Archaeological Collections

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At the request of the U.S. Fish and Wildlife Service (FWS), the U.S. Army Corps of Engineers, St. Louis District (SLD), conducted an assessment of museum property at select National Wildlife Refuges (NWR) in the states of Alaska, Illinois, Kansas, Missouri, Nebraska, and North Dakota. SLD identified museum property disciplines at each NWR and provided suggestions and estimates for bringing them into compliance with 36 CFR Part 79 (Curation of Federally-Owned and Administered Archaeological Collections) and 411 DM (Department of Interior Departmental Manual). Each building housing museum property at the NWRs was also assessed to determine its level of compliance with 36 CFR Part 79 and 411 DM. None of the 12 buildings housing museum property are in full compliance with either 36 CFR Part 79 or 411 DM.

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Executive Summary

Project Background

Federal collections are a significant, non-renewable national resource. The American public is the ultimate owner of these materials and documentation, but as stewards of these treasures, it is incumbent upon the Federal agencies to uphold the laws and regulations set forth by Congress for their proper use and long-term care. Curation and accountability of these materials has been insufficient and/or ignored for the last fifty years. Many collections have been lost or destroyed, and many more are stored in buildings that are not equipped for long-term archaeological curation as outlined in 36 CFR Part 79, Curation of Federally-Owned and Administered Archeological Collections (1991). Unfortunately, funding shortfalls and lack of collections knowledge by federal agency officials have resulted in the deterioration of many of these collections.

The U.S. Fish and Wildlife Service (hereafter FWS) is responsible for managing museum property collections in their possession according to regulations and standards outlined and described in the Department of the Interior's Departmental Manual, Museum Property Handbook (hereafter 411 DM). It is the policy of FWS to preserve, protect, account for, and document museum property collections for use, study, and interpretation for public benefit. As mandated by 411 DM, responsible agencies are required to ensure that all museum property is adequately curated and accounted for through an annual inventory, which is delivered to the inspector general.

FWS contracted with the U.S. Army Corps of Engineers Mandatory Center of Expertise for the Curation and Management of Archaeological Collections in the St. Louis District to assess museum property and building compliance at select National Wildlife Refuges (NWR) in the United States. This project will assist the FWS Museum Property Program in determining the current needs of the collections and the facilities.

Project Scope

In June 2005, the U.S. Army Corps of Engineers, St. Louis District (SLD), entered into an agreement (Interagency Agreement 98210-5-H020) with the United States Department of Interior, Fish and Wildlife Service, to assist them in complying with the requirements of 36 CFR Part 79 and 411 DM. At the request of the FWS, curation-needs assessments of museum property were conducted at National Wildlife Refuges from three regions—Region 3, Midwest (Crab Orchard NWR and Mingo NWR), Region 6, Mountain-Prairie (Arrowwood NWR, Chase Lake NWR, Ft. Niobrara NWR, and Marais des Cygnes NWR), and Region 7, Alaska (Izembek NWR). The buildings holding museum property also were evaluated as to their ability to serve as adequate long-term curation facilities.

Findings

Status of Buildings Housing Museum Property

Museum property was assessed at seven national wildlife refuges. Materials assessed during the course of this project are stored in a variety of buildings (Table 1).

Table 1.
Types and Frequencies of Buildings Housing Museum Property at Select National Wildlife Refuges

Type of Building	Frequency
Headquarters'/Administration Buildings	4
Visitor's Centers	4
Other (garages, bunkhouses, etc.)	4
Total	**12**

Each of the buildings identified during the course of this project was evaluated in order to determine its level of compliance with 36 CFR Part 79 and 411 DM. To best accomplish this assessment, information pertaining to environmental controls, security, fire safety, and pest management for each repository were collected (Table 2). Additional information on these particular points and a breakdown for each repository are located in Appendix 1.

1. Environmental Controls: Minimally, adequate environmental controls should include air conditioning regulation, heat regulation, humidity monitoring/regulation, and janitorial regulation. None (0%) of the 12 buildings identified and examined had all four required environmental elements; however, seven had everything but humidity monitoring/regulation.

2. Security: Minimally, adequate security measures should include detection (e.g., intrusion alarm) and deterrent measures (e.g., controlled access key locks, dead-bolt locks). Two (17%) of the 12 buildings examined had security systems that incorporate these aspects.

3. Fire Safety: Minimally, an adequate fire-safety system should possess detection (e.g., wired or manual fire alarm) and suppression features (SLD interprets an adequate suppression system to include a sprinkler system). None (0%) of the 12 buildings examined had fire-safety systems that incorporate these aspects.

4. Pest Management: Minimally, adequate pest management should include janitorial regulation, pest monitoring, and pest control. Three (25%) of the 12 buildings examined possess adequate pest management programs.

Table 2.
Criteria to Determine if Buildings Meet the Minimum Requirements of 36 CFR Part 79[1]

Repository	Environmental Controls	Security	Fire Safety	Pest Management	Meets Minimum 36 CFR 79 Standards
Izembek National Wildlife Refuge, Visitor's Center	No	No	No	No	**No**
Izembek National Wildlife Refuge, Bunkhouse	No	No	No	No	**No**
Crab Orchard National Wildlife Refuge, Administration Building	**Yes**	No	No	**Yes**	**No**
Crab Orchard National Wildlife Refuge, Visitor's Center	**Yes**	**Yes**	No	**Yes**	**No**
Marais des Cygnes National Wildlife Refuge	**Yes**	No	No	**Yes**	**No**
Mingo National Wildlife Refuge	**Yes**	No	No	**Yes**	**No**
Ft. Niobrara National Wildlife Refuge, Visitor's Center	**Yes**	No	No	**Yes**	**No**
Ft. Niobrara National Wildlife Refuge, Old Museum Building	No	No	No	No	**No**
Arrowwood National Wildlife Refuge, Headquarters' Building	**Yes**	No	No	No	**No**
Arrowwood National Wildlife Refuge, Bunkhouse	No	No	No	No	**No**
Arrowwood National Wildlife Refuge, Garage	No	No	No	No	**No**
Chase Lake National Wildlife Refuge	**Yes**	**Yes**	No	No	**No**

In sum, none of the buildings currently meet the minimum standards noted in 36 CFR Part 79 for the points listed above (i.e., possess all four of the above attributes).

411 DM Repository Evaluation Summary

In addition to the 36 CFR Part 79 requirements, a facility condition assessment using the 411 DM Facility Checklist also was conducted on the buildings that hold museum property. All 12 buildings assessed received a poor condition, with an overall average score of 24%. A summary of the buildings assessed and their score are provided in Table 3. The condition rating includes individual checklist scores for each space/room in which museum property is held at the refuge. Additional information on these particular points and a breakdown for each building and rooms are located in Appendix 1.

Table 3.
411 DM Facility Checklist Summary

Refuge	Building	Space/Room Type[1]	Number Rooms	Condition[2]	Percentage
Izembek	Visitor's Center	Administrative Office	4	Poor	27%
		Exhibit	1	Poor	15%
		Storage	1	Poor	16%
	Overall Total		**6**		**18%**
	Bunkhouse	Administrative Office	**1**	Poor	**20%**
Crab Orchard	Administration Building	Administrative Office	**1**	Poor	**13%**
	Visitor's Center	Administrative Office	1		29%
		Exhibit	2	Poor	34%
	Overall Total		**3**	Poor	**33%**
Marais des Cygnes	Visitor's Center	Administrative Office	**2**	Poor	**33%**
Mingo	Headquarters Building	Administrative Office	4	Poor	43%
		Exhibit	1	Poor	38%
	Overall Total		**5**	Poor	**39%**
Ft. Niobrara	Visitor's Center	Administrative Office	2	Poor	27%
		Exhibit	1	Poor	33%
	Overall Total		**3**	Poor	**31%**
	Old Museum Building	Administrative Office	**4**	Poor	**13%**
Arrowwood	Headquarters Building	Administrative Office	**3**	Poor	**47%**
	Bunkhouse	Administrative Office	**1**		**20%**
	Garage	Administrative Office	**1**	Poor	**7%**
Chase Lake	Headquarters Building	Administrative Office	**2**	Poor	**33%**

1. Administrative Office includes offices, lobbies, meeting rooms, hallways, and any other non-dedicated space within a building used to house museum property. Exhibit rooms include any space dedicated to display original documents, objects, or specimens (or copies thereof) for educational and cultural purposes. Storage rooms include space designated for the safekeeping of museum property not currently on exhibition.
2. A *poor* condition is assigned when 49 percent or less of the applicable standards on the 411 DM Checklist are met for all spaces (storage, exhibit, and administrative office spaces) holding a collection. A *fair* condition is assigned when 50 to 69 percent of the applicable standards on the 411 DM Checklist are met. A *good* condition is assigned when 70 percent or greater of the applicable standards on the 411 DM Checklist are met. Ratings are generated by calculating the percentage by dividing the total applicable standards met for all spaces for a collection (i.e., location) by the total applicable standards for all spaces for a collection.

Overall, 32 rooms in 12 buildings house museum property. Of these rooms, administrative offices (26) makeup the majority of the rooms where museum property is stored (81%), while only 5 exhibit rooms (16%), and one storage room (3%) house museum property. None of the rooms that were assessed meet the criteria as defined in 411 DM.

Museum Property Status

Museum property is divided into ten discipline classification types in order to manage and retrieve objects and data more efficiently. The following ten disciplines have been categorized as museum property: archaeology, art, associated records, botany, environmental samples, ethnography, geology, historical objects, paleontology, and zoology. Table 4 lists the museum property disciplines assessed during this project.

Table 4.
Museum Property Disciplines Assessed at Select National Wildlife Refuges

Refuge	Archaeology	Art	Associated Records	Botany	Geology	Historical Objects	Paleontology	Zoology
Izembek	X		X	X		X		X
Crab Orchard	X	X	X					X
Marias des Cygnes	X		X		X			X
Mingo	X		X			X		X
Ft. Niobrara	X		X	X		X	X	X
Arrowwood			X			X		
Chase Lake			X					X

Note: Two disciplines were omitted as they were not represented/located at any of the refuges—environmental samples and ethnographic materials.

Archaeological collections located at the following refuges consist of 83.17 ft^3 of artifacts and 105.11 linear feet of associated records. Table 5 summarizes the archaeological collections and associated records assessed for this project.

Table 5.
Collections Summary by Refuge

Refuge	Archaeological Materials (ft^3)	Records (Linear Feet)
Izembek	0.22	20.30
Crab Orchard	2.73[1]	6.43
Marais des Cygnes	6.46	1.18
Mingo	36.36[1]	19.11
Ft. Niobrara	37.40	43.93
Arrowwood	n/a	11.38
Chase Lake	n/a	2.78
Totals	**83.17**	**105.11**

Note: In reviewing tables in the report and the database there may be discrepancies in totals due to individual rounding operations in the database management software.

[1] Some of the archaeological collections assessed at these refuges were on long-term loan from the universities who are responsible for the long-term curation of the collections.

Both object and record collections were evaluated to determine their rehabilitation status. This information is pertinent in order to more fully understand what each collection requires to bring it into compliance with existing federal standards and guidelines. All FWS Museum Property collections have a high rehabilitation status (i.e., they require extensive rehabilitation). Using SLD rehabilitation standards, a cost estimate for accomplishing rehabilitation tasks was prepared to assist FWS with budget preparation. These costs, which are located in Appendix 3, are based on SLD expertise and should be viewed as gross estimates for collection rehabilitation. A more-refined rehabilitation budget should be prepared for FWS when they decide which collections they want to rehabilitate.

Corrective Actions

A number of corrective actions are necessary to bring FWS Museum property collections and those facilities housing them into compliance with 36 CFR Part 79.

1. Determine the adequateness and costs of capital improvements for the current FWS facilities through a detailed architectural examination of the buildings. FWS may wish to investigate the possibility of coalescing their collections into a single facility and spending the requisite funds to upgrade the collections to federal curation standards. In addition, this facility should have the professional capability and staff to care for the collections in perpetuity.

2. Develop a scope of collections plan at the regional or refuge level to help manage museum property.

3. Develop and implement a formal archives-management program.

4. Rehabilitate existing artifacts and records by inventorying and cataloging the materials to a standard consistent with those of a professional museum, and re-house collections using archival-quality containers.

5. Develop and implement education programs, if possible, using the museum property materials.

These corrective measures, if carried out, will permit FWS to meet minimum federal requirements for the long-term care of their archaeological collections. By adopting this approach, FWS has the opportunity to implement a curation program that allows public access and serves its needs well into the future.

Conclusions

FWS should take major steps in addressing its curation/collections-management responsibilities for the museum property they have acquired. FWS should use the findings presented in this report to prepare long-term management plans, specifically addressing preservation and curation of museum property and building deficiencies. Such plans will ensure that the museum property will maintain its education and research potential. The increased attention to these collections will more adequately preserve them for use by future generations.

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Mingo National Wildlife Refuge
Kathleen Burchett, Refuge Manager
Vergial Harper, Refuge Ranger

Ft. Niobrara National Wildlife Refuge
Royce Huber, Refuge Manager
Todd Frerichs, Deputy Project Leader

Arrowwood and Chase Lake National Wildlife Refuges
Kim Hanson, Refuge Manager

1

Introduction

The U.S. Fish and Wildlife Service is responsible for archaeological artifact collections and accompanying documentation (hereafter referred to as archaeological collections) stored in repositories and at refuges throughout the United States. The project area covered in this report consists of FWS refuges in the states of Alaska, Illinois, Kansas, Missouri, Nebraska, and North Dakota (see Figure 1).

The responsibility for archaeological collections is mandated through numerous legislative enactments, including the Antiquities Act of 1906 (16 U.S.C. 431-433), the Historic Sites Act of 1935 (16 U.S.C. 461-467), the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. 469-469c), the National Historic Preservation Act of 1966 (16 U.S.C. 470), and the Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa-470mm). Executive Order 11593 (U.S. Code 1971) and amendments to the National Historic Preservation Act in 1992 provide additional protection for these resources. The implementing regulation for securing the preservation of archaeological collections is 36 CFR Part 79, Curation of Federally-Owned and Administered Archeological Collections. In addition, the Department of Interior has issued Departmental Manual 411 (411 DM), *Museum Property Handbook*, which incorporates existing statutes and regulations for all Department of Interior entities.

In June 2005, the Department of the Army, represented by the U.S. Army Engineer District, St. Louis, and the United States Department of the Interior, Fish and Wildlife Service, completed Support Agreement No. 1 under a Memorandum of Agreement. This agreement specified that SLD was to provide assistance to the FWS Museum Property program through: (1) contacting the manager of select FWS field stations who are in need of assistance with respect to how best to mange their museum property collections; (2) visit the FWS field stations to examine and ascertain the level of need for the materials (3) prepare a report of findings for each FWS field station listing a brief inventory of the collections along with suggested recommendations, including cost estimates, for bringing the collections into compliance with Federal regulations for museum property management. The project goal was to aid FWS with their museum property program and recommendations for the collections, as well as their status to inform further efforts to address FWS collections needs.

In furtherance of this project, an agreement with the FWS authorized the Mandatory Center of Expertise for the Curation and Management of Archaeological Collections, hereafter St. Louis District (SLD), to conduct a curation-needs assessment of museum property at select FWS refuges (Figure 1). The refuges designated for assessment included the following: Izembek National Wildlife Refuge (Alaska), Crab Orchard National Wildlife Refuge (Illinois), Marais des Cygnes National Wildlife Refuge (Kansas), Mingo National Wildlife Refuge (Illinois), Fort Niobrara National Wildlife Refuge (Nebraska), and Arrowwood and Chase Lake National Wildlife Refuges (North Dakota). The scope of work for this project included the development of summary inventories of collections and an assessment of the curation infrastructure at these refuges.

The methods used during the course of this project have been developed by the St. Louis District and are those that have proven the most efficient in providing requisite data in the most time-and cost-effective manner. These methods (detailed below) are the same as those used during previous examinations of FWS archaeological collections.

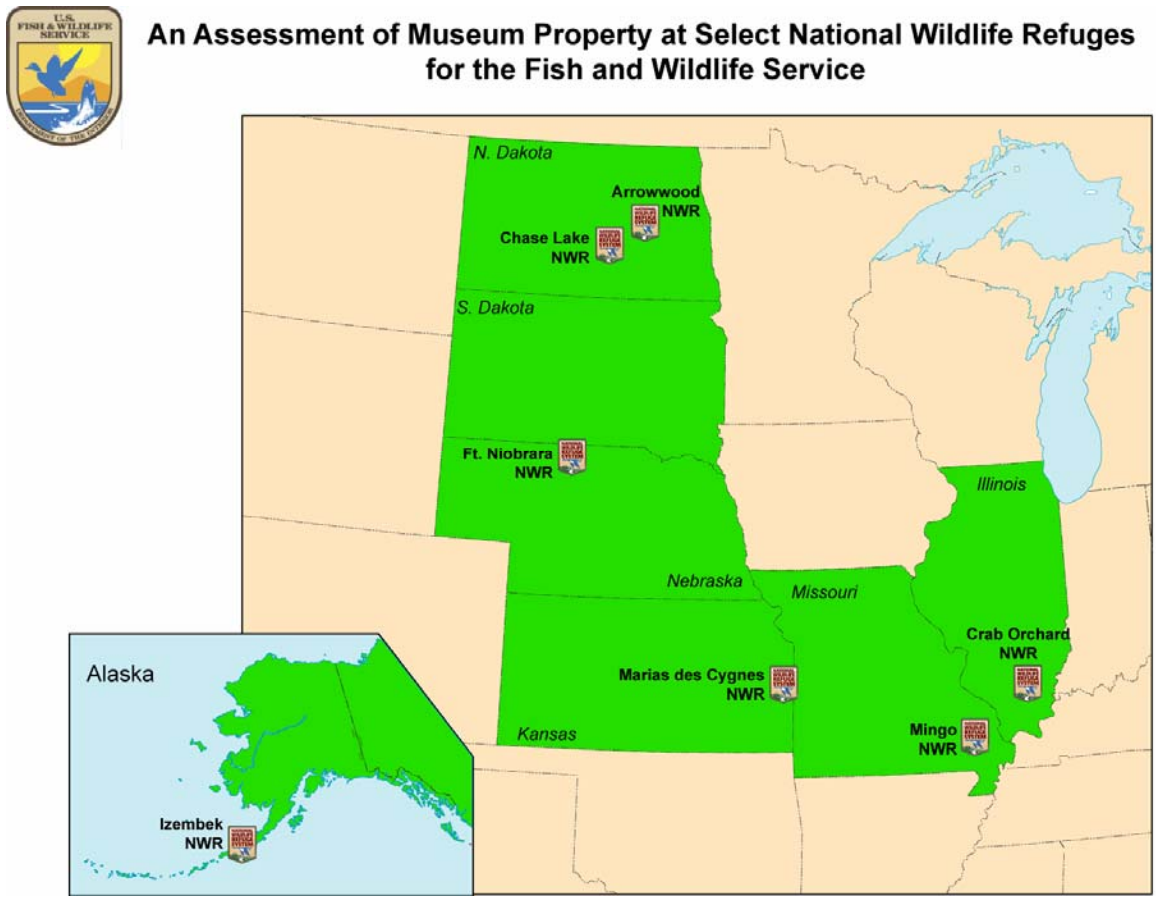

Figure 1. Location of Select National Wildlife Refuges.

Pre-Fieldwork

After compiling information on the subject FWS refuges, the SLD contacted the regional archaeologists and field stations (refuge) to determine the extent of collections being held by the facility. In addition, arrangements were made to visit each refuge for the purpose of on-site curation assessments.

Curation Assessments

Refuges were visited on the following dates, and each curation assessment was performed using standardized procedures and forms.

Izembek National Wildlife Refuge	June 26–30, 2006
Crab Orchard National Wildlife Refuge	May 10–11, 2006
Marias des Cygnes National Wildlife Refuge	March 28–29, 2006
Mingo National Wildlife Refuge	May 8–9, 2006
Ft. Niobrara National Wildlife Refuge	May 23–25, 2006
Arrowwood National Wildlife Refuge	June 6–8, 2006
Chase Lake National Wildlife Refuge	June 9, 2006

(1) Completion of a building evaluation to determine whether or not the facility approached compliance with the requirements for repositories specified in 36 CFR Part 79 and 411 DM. Forms address topics such as structural adequacy, space utilization, environmental controls, security, fire detection and suppression, pest management, and utilities. Data were gathered both by observation and through discussion with refuge managers.

(2) Examination of all documentation was conducted to determine the presence of the different types, the amount present, and its condition. Types of documentation include project and site reports, administrative files, field records, photographic records, maps, and blueprints. For each type of document the total linear footage, physical condition of the containers and the records, and the overall condition of the storage environment was collected. The determination of whether or not the collections are in compliance with the archives management requirements specified in 36 CFR Part 79 is based on this information.

(3) Examination and evaluation of artifact collections was conducted to determine their condition and compliance with 36 CFR Part 79. Assessments included an examination of the condition of primary and secondary containers, the extent of materials present, overall condition, and level and cost of rehabilitation needed for compliance.

Report Generation

Following completion all assessment activities and the entry of all information into appropriate electronic formats; a written report was produced that detailed the results of St. Louis District investigations. Chapters 2–8 provide a detailed examination of the museum property and buildings that were assessed, extent of the museum property and their condition, descriptions and compliance status of the buildings to 36 CFR Part 79 and 411 DM, and recommendations for the rehabilitation of the facilities and/or the collections. Chapter 9 outlines the overall findings of the project. Appendix 1 contains detailed information pertaining to building compliance with 411 DM and 36 CFR Part 79, while Appendix 2 has a sample building evaluation used to determine compliance with 36 CFR Part 79 during the refuge assessments. Appendix 3 contains detailed information on rehabilitation costs for objects and records.

2

Izembek National Wildlife Refuge
Cold Bay, Alaska

Museum Property Management at Izembek NWR

Museum property is stored at two facilities at the Izembek NWR—the visitor's center and the bunkhouse (Figures 2 and 3). The Refuge was visited from June 26 to 29, 2006.

Figure 2. Exterior view of the Izembek NWR visitor's center.

Figure 3. Exterior view of the Izembek NWR bunkhouse.

Within the Izembek visitor's center, six rooms house museum property—the botanical/zoological laboratory and storage room (VC1), library (VC2), exhibit space in the hallway (VC3), assistant refuge manager's office, (VC4), a refuge slide storage/personnel office (VC5), and the copy room (VC6). In the bunkhouse, only the living room houses museum property. Tables 6 and 7 list the museum property disciplines and totals examined during the assessment at these facilities. Detailed building and storage room conditions are described in the Museum Property Storage summary.

Table 6.
Museum Property Disciplines and Totals at
Izembek NWR Visitor's Center

Storage Location							
VC1	**VC2**	**VC3**	**VC4**	**VC5**	**VC6**	**Disciplines[1]**	**Extent**
X						Archaeology	0.22 ft^3
	X		X	X	X	Associated Documents (Records)[2]	18.59 linear feet
X						Botany	17.6 ft^3
			X			History	2.35 ft^3
X	X	X				Zoology	73.5 ft^3 plus sixty-two mounted or representative specimens

[1] Only those museum property disciplines in the visitor's center are listed in the table.
[2] Includes photographs and oversized materials.

Table 7.
Museum Property Disciplines and Totals at
Izembek NWR Bunkhouse

Living Room	Disciplines[1]	Extent
X	Associated Documents (Records)[2]	1.71 linear feet
X	Zoology	3 mounted or representative specimens

[1] Only those museum property disciplines in the bunkhouse are listed in the table.
[2] Includes photographs and oversized materials.

Museum Property Storage Summary

Visitor's Center

Zoological/Botanical Laboratory and Storage Room

This laboratory and storage room (VC1) currently holds archaeological, botanical, and zoological materials. The room, which is approximately ninety percent full, also contains a study/work area and a sink. None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Collections are stored (1) in two two-door museum cabinets (Figure 4), (2) a compartmentalized herbarium cabinet, (3) a metal cabinet with drawers, and (4) loose on top of various cabinets throughout the room. Two windows are present, and they do not have shades or blinds. Some hazardous materials (e.g., peroxide, moth balls) are stored in this room; however, no ventilation system is installed. Moth balls and sticky traps have been placed in various drawers to protect zoological specimens from insects that could come in contact with the materials (Figure 5).

Figure 4. Metal cabinets are used to house archaeological and zoological specimens.

Figure 5. Close-up view of moth balls and sticky traps in drawer with zoological specimens.

Museum Property Housing Summary

Archaeological—Only 0.22 ft^3 of archaeological materials are stored at the refuge. The materials are stored in a two-door museum cabinet in one drawer, both of which are not labeled. Artifacts have been cleaned and are stored loose in the drawer (Figure 6). Some are labeled directly in marker, with masking tape, or with self-adhesive notes with the location and date only.

Figure 6. Close-up view of archaeological artifacts.

Figure 7. Metal shelf/compartments are used to house the Herbarium samples.

Botanical—17.6 ft^3 of herbarium samples are located in the zoological/botanical storage room. Samples are stored in an unlocked metal herbarium cabinet in 23 metal compartments (Figure 7). Samples are glued directly to acidic paper and are labeled directly in ink with the following information: scientific name/common name, locality, collector, identified by, and remarks.

Zoological—A total of 73.5 ft^3 of zoological specimens are stored (1) in two two-door museum cabinets and a metal cabinet, none of which are locked or labeled, and (2) loose on various cabinets in the room. Specimens in the drawers are either wrapped in plastic or cotton batting or stored loose within the drawers, while other specimens are stored loose on mounts on top of cabinets. Specimens have been cleaned and labeled; most have a string paper tag attached listing the specimen name/type, sex, refuge, date, and collector. A general finding aid (drawer-by-drawer of contents) was created for the specimens in the drawers to help researchers.

Library

The library (VC 2) encompasses approximately two hundred square feet and currently holds zoological collections and associated records (Figure 8). The room, which is at capacity, also serves as a meeting and a break room. None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Zoological collections and associated records are stored on metal shelving units, while additional documentation is stored in acidic boxes stacked on the floor. Two windows are present, and they do not have shades or blinds. No hazardous materials are stored in this room.

Museum Property Housing Summary

Associated Records—10.68 linear feet of records are stored in the library. Records from the Alaska Maritime NWR, totaling 0.25 linear feet, also are stored here. Record types include reports, color/black and white photos, and administrative files. Records are stored (1) on eight metal shelving units in acidic file boxes, (2) loose on the shelves, or (3) in acidic boxes stacked on the floor. Secondary containers consist of acidic file and manila folders, binders, ledgers, and loose on the shelves or within the boxes. All of the records have been sorted; however, only about half have been labeled.

Figure 8. A view of the Izembek NWR library.

Zoological—Nine zoological specimens, including ducks and birds, are present on various shelves throughout the room. Specimens are mounted and labeled with the species name.

Exhibit Hallway

The exhibit hallway (VC3), which is located at the front entrance of the building, currently displays zoological specimens and copies of associated records. The room, which is approximately ninety percent full, also contains an office area and a guest sign-in station. None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Specimens are displayed in a variety of ways (1) loose on tops of various shelves, (2) freestanding on floor mounts/displays, or (3) in enclosed plastic exhibit cases (Figure 9). One door and window are present, the door has no covering, but the window has a mini-blind covering. No hazardous materials are stored in this room.

Museum Property Housing Summary

Associated Records—Copies of associated records only are stored within the exhibit area. Copies of associated records do not fall under the museum property criteria and, therefore, were not assessed.

Zoological—A total of 53 zoological specimens are located in the exhibit. All of the materials have been sorted and cleaned. Specimens are mounted are labeled with the species name.

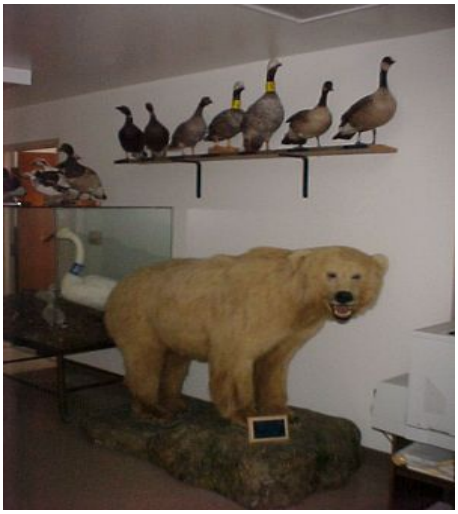

Figure 9. Zoological mounts in the exhibit hallway at Izembek NWR.

Assistant Refuge Manager's Office

The assistant refuge manager's office (VC 4) currently holds associated records and historical objects. The room, which is approximately sixty-to-seventy percent full, also contains closets that house various refuge clothing and supplies. None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Historical objects are stored on top of a wooden shelving unit, while associated records are stored in a wooden map file cabinet and a metal letter-sized file cabinet, neither of which are locked. Two windows are present, and they do not have shades or blinds. It is unknown if any hazardous materials are stored in this room.

Museum Property Housing Summary

Associated Records—Oversized maps and associated records totaling 4.69 linear feet are stored in a wooden map file cabinet and a metal letter-sized file cabinet. Maps, which have been flattened, are stored loose in seven drawers. Records are stored in four drawers in a variety of secondary containers—expandable folders, manila folders, or hanging folders. All of the records have been sorted and cleaned, and approximately fifty percent are labeled. Staples, paper clips, and rubber bands are present on these records.

Historical Objects—Three wooden waterfowl decoys (2.35 ft^3) from the 1960s are present in the assistant refuge manager's office (Figure 10). The decoys are stored loose on a wooden shelving unit. All three decoys have been incised with "N.W.R. IZM-04."

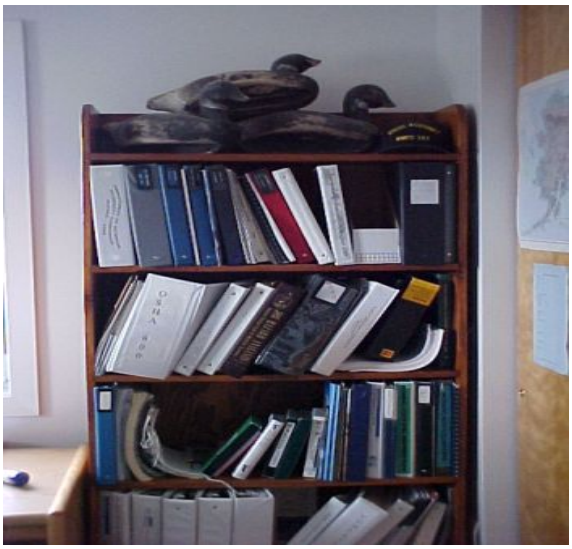

Figure 10. Waterfowl duck decoys stored on a wooden shelf at Izembek NWR.

Slide Storage Room/Personnel Office

This office (VC 5) holds associated records (slides) only. The room, which is approximately eighty percent full, also contains a closet that houses various educational refuge materials. None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Collections are stored loose on a wooden shelf or in a slide cabinet. One window is present, and it does not have a shade or blind. No hazardous materials are stored in this room.

Museum Property Housing Summary

Associated Records—This room holds 2.03 linear feet of slides. Slides are stored on the wooden shelf in plastic protective sleeves, and loose within the slide cabinet. All of the materials have been sorted and cleaned and approximately forty-to-fifty percent of the slides are labeled. A simple subject finding-aid has been created for the slides.

Copy Room

The copy room (VC 6) holds associated records only. The room, which is approximately ninety percent full, also houses refuge materials and supplies (e.g., radios, fax machine). None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. One window is present; no shades or blinds are present. No hazardous materials are stored in this room.

Museum Property Housing Summary

Associated Records—Associated records totaling 1.19 linear feet are stored in four metal letter-sized file cabinets that are locked when not in use. Record types include archaeological reports, black and white photos, and administrative and military files. Secondary containers include expandable, manila, or hanging folders within the drawers. All of the records have been sorted and cleaned, and approximately ninety percent are labeled. A simple finding-aid (subject-by-subject format) has also been created to locate records. A large quantity of staples, paper clips, and rubber bands were noted.

Bunkhouse

Living Room

This room is located in the refuge's bunkhouse quarter's, which is used by seasonal and visiting personnel. The living room currently holds associated records, including oversized materials, blueprints, and reports, and three zoological specimens (Figure 11). The room is approximately sixty-to-seventy-five percent full. None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Materials are stored in drawers or loose on top of a map file cabinet. Three large windows are present in the room; however, they are not covered with shades or blinds.

Figure 11. Map file cabinet in the bunkhouse at Izembek NWR.

Museum Property Housing Summary

Associated Records—1.71 linear feet of maps, blueprints, and reports are stored in the map file cabinet loose within the drawers. Maps and blueprints are flattened within the drawers but are not properly preserved. All records have been sorted and cleaned, but only 40–50% are labeled.

Zoological—Three zoological specimens (a fox, a bird, and a duck) are stored loose on top of a metal map file cabinet. None of the specimens have been labeled.

36 CFR Part 79 Compliance

Building Condition and Structural Adequacy

The Izembek NWR visitor's center was constructed in 1960, is easily accessible from the streets of Cold Bay, and has adequate parking for visitors and researchers. The building has no loading dock and is not located in a floodplain, in a hurricane zone, or near nuclear facilities; however, it is located in an earthquake zone. The building foundation is concrete with corrugated metal siding exterior walls and a corrugated metal roof. Some external renovations have taken place on the building—replacement of the roof in 2003 and a garage addition in the mid 1980s. The staff has not observed any cracks or leaks in either the foundation or the roof. Twenty-two steel-framed windows are present throughout the building. All of the windows are watertight. Two of the windows are not airtight. Building utilities include running water, telephone, electrical, and intranet services. Public restrooms also are present in the building.

The bunkhouse was constructed in 1980 and is located next to the visitor's center. It is easily accessible from the streets of Cold Bay and has limited parking for visitors and residents; however, parking is available next door at the visitor's center. The building has no loading dock. The building foundation is concrete with corrugated metal siding exterior walls and a corrugated metal roof. The staff has not observed any cracks or leaks in either the foundation or the roof. Thirteen steel-framed windows are present throughout the building, and all of the windows are watertight and airtight. Building utilities include running water, telephone, electrical, and intranet services. Public restrooms with shower units also are present in the building.

Heating, Ventilating, and Air Conditioning Systems, and Environmental Controls

A diesel-powered heating system furnishes both of the structure's heating needs; however, no central air conditioning system is present due to the location in the lower Alaskan Peninsula. Temperatures rarely rise above 65 degrees in the summer months. Both buildings are cleaned as needed by refuge personnel. Temperature and humidity are not monitored or controlled in either building.

Space Allocation and Hazardous Chemical Use and Storage

The visitor's center encompasses 2,604 ft^2 and has the following components: records and photographic storage rooms, zoological and botanical storage room, exhibit area, offices, gun safes, and materials/supplies storage room. A small amount of chemicals (e.g., peroxide, moth balls) are used in the repository and are located in the zoological and botanical storage room.

The bunkhouse, which is used primarily as living quarters, encompasses an estimated fifteen hundred square feet and has a records storage room and materials/supplies storage room. The main entrance leads to a small materials/supplies storage room, with refrigeration and freezer units, some of which hold zoological and botanical specimens. It is unknown if any chemicals are stored long term in the bunkhouse.

Security System

Major entrances and office doors are secured with key locks, while all windows are secured with window locks. Automatic garage doors secure the garage contents. No security-detection system is installed. There have been no episodes of unauthorized entry.

The bunkhouse is secured with key locks through the main entrance, while all windows are secured with window locks. No security-detection system is installed. There have been no episodes of unauthorized entry.

Fire-Detection and-Suppression Systems

Both buildings possess manual fire alarms and smoke detectors, which are located throughout the building. Fire extinguishers, which were last inspected in May 2006, also are present at key locations throughout the buildings.

Pest Management

Regular monitoring and control of pests as defined in 36 CFR Part 79 are not preformed at either building. Refuge personnel monitor storage areas as needed; however, pests are rarely a problem in the lower Alaskan Peninsula. According to refuge personnel, pests are taken care of by the wind, as they are usually blown away before they are able to get into the building. Refuge personnel have noted a few pests in the zoological and botanical collections storage area in the past and have placed moth balls in the drawers to help remedy the problem. Personnel have not noticed any pests in the bunkhouse.

36 CFR Part 79 Compliance Summary

Neither building housing museum property at the Izembek NWR complies with 36 CFR Part 79 (e.g., environmental controls, security, fire safety, and pest management). A number of corrective actions are necessary in order for the buildings to comply with the minimum standards. For 36 CFR Part 79 building criteria and attributes, see Appendix 1.

411 DM Repository Evaluation Summary

A facility condition assessment using the 411 DM Facility Checklist was conducted on the two buildings that hold museum property at Izembek NWR. The visitor's center received a poor condition, with an overall score of 18%, while the bunkhouse also received a poor condition, with an overall score of 20% (Table 8). The condition score includes individual checklist scores for each space/room in which museum property is held at the refuge. For individual facility/room checklists, criteria, and definitions, please see Appendix 1.

Table 8.
411 DM Facility Checklist Summary at Izembek NWR

Building	Space/Room Type[1]	Number Rooms	Standards Met	Applicable Standards	Condition[2]	Percentage
Visitor's Center	Administrative Office (VC2, 4-6)	4	4	15	Poor	27%
	Exhibit (VC3)	1	5	33	Poor	15%
	Storage (VC1)	1	6	37	Poor	16%
Overall Total		**6**				**18%**
Bunkhouse	Administrative Office	1	3	15	Poor	20%
Overall Total		**1**				**20%**

1. Administrative Office includes offices, lobbies, meeting rooms, hallways, and any other non-dedicated space within a building used to house museum property. Exhibit rooms includes any space dedicated to display original documents, objects, or specimens (or copies thereof) for educational and cultural purposes. Storage rooms' include space designated for the safekeeping of museum property not currently on exhibition.
2. A *poor* condition is assigned when 49 percent or less of the applicable standards on the 411 DM Checklist are met for all spaces (storage, exhibit, and administrative office spaces) holding a collection. A *fair* condition is assigned when 50 to 69 percent of the applicable standards on the 411 DM Checklist are met. A *good* condition is assigned when 70 percent or greater of the applicable standards on the 411 DM Checklist are met. Ratings are generated by calculating the percentage by dividing the total applicable standards met for all spaces for a collection (i.e., location) by the total applicable standards for all spaces for a collection.

Rooms in both buildings received a rating of poor as they did not meet the following 411 DM general standards: written policies or procedures dealing with the management and long-term care of museum property (i.e., control of access and handling of museum property procedures, and emergency, fire safety, and pest management plans); maintenance of recording and monitoring devices for temperature, relative humidity, and light fluctuations; use of appropriate museum-quality containers; and the proper display/exhibit of museum property. For individual facility/room checklists, criteria, and definitions, please see Appendix 3.

In order for the facility to improve its rating to fair or good, FWS and Izembek NWR must first develop management standards that address the proper care and preservation for the museum property in their possession.

Rehabilitation Effort Summary and Recommendations

Archaeological collections and associated records housed at Izembek NWR require certain tasks be completed before they are considered to be compliant with federal and professional curation standards. Rehabilitation effort is based upon the completion of specific tasks that are associated with bringing the materials into compliance with 36 CFR Part 79. A designation of low is assigned in instances where one-to-two tasks are required; high is assigned in instances where more than two tasks are required. Compliance tasks and rehabilitation costs for archaeological collections are listed in Table 9. Rehabilitation costs and formulas can be found in Appendix 3.

Table 9.
Collections Rehabilitation Summary at Izembek NWR

Collection Type	Location	Extent (Cubic or linear feet)	Rehabilitation Effort	Task	Complete	Incomplete	Estimated Rehabilitation Cost
Archaeological	VC1	0.22	High	Sorting	X		n/a
				Bagging		X	$60
				Acid-free insert		X	$60
				Boxes		X	$20
				Labels		X	$20
Associated Documents	VC2	10.68	High	Arrangement	X		n/a
				Folders		X	$6,600
				Labels		X	$6,600
				Boxes/Fireproof Cabinets		X	$6,600
				Finding Aids		X	$7,700
				Security Copy		X	$33,500
Associated Documents	VC4	4.69	High	Arrangement	X		n/a
				Folders		X	$2,900
				Labels		X	$2,900
				Boxes/Fireproof Cabinets		X	$2,900
				Finding Aids		X	$3,400
				Security Copy		X	$14,700
Associated Documents	VC5	2.03	High	Arrangement	X		n/a
				Folders		X	$1,300
				Labels		X	$1,300
				Boxes/Fireproof Cabinets		X	$1,300
				Finding Aids		X	$1,500
				Security Copy		X	$6,400
Associated Documents	VC6	1.19	High	Arrangement	X		n/a
				Folders		X	$800
				Labels		X	$800
				Boxes/Fireproof Cabinets		X	$800
				Finding Aids	X		n/a
				Security Copy		X	$3,800

Collection Type	Location	Extent (Cubic or linear feet)	Rehabilitation Effort	Task	Complete	Incomplete	Estimated Rehabilitation Cost
Associated Documents	Bunkhouse	1.71	High	Arrangement	X		n/a
				Folders		X	$1,100
				Labels		X	$1,100
				Boxes/Fireproof Cabinets		X	$1,100
				Finding Aids		X	$1,300
				Security Copy		X	$5,400

Notes:
1. Rehabilitation effort is based upon the completion of specific tasks that are associated with bringing the **objects** into compliance with 36 CFR Part 79. Tasks are described as (1) Sorting by provenience and materials unless otherwise noted; (2) Bagging—all materials are placed in appropriate archival-quality, zip-lock bags; (3) Acid-free inserts are created and placed inside each new bag; (4) Boxes—all rebagged objects are placed into new archival boxes; and (5) Labels are applied to all new boxes.
2. Rehabilitation effort is based upon the completion of specific tasks that are associated with bringing the records into compliance with 36 CFR Part 79. Tasks are described as (1) Arrangement of records in a logical order; (2) Repackaging all records in archival-quality secondary containers; (3) Labels—all secondary containers are labeled in pencil or indelible ink; (4) Boxes—all records are placed into fireproof cabinets or new archival cardboard boxes with acid-free labels that are applied to new boxes; (5) Finding Aids—a formal description of the records collection is prepared; and (6) Preservation/Security Copies have been made and are stored off-site.
3. Rehabilitation costs are rounded up to the nearest hundred dollar amount.

Archaeological collections, which total 0.22 ft^3, have a high rehabilitation effort. In order for the collections to meet the standards of 36 CFR Part 79, the following steps should be taken: (1) place artifacts in 4-mil zip-lock bags, (2) insert acid-free tags into the bags listing, at the very minimum, collector, date, and location, (3) place artifacts into new archival containers (e.g., acid-free box or fire-proof cabinet), and (4) apply labels to the exterior of the new containers. If collections are rehoused in archival boxes, acid-free box labels should be placed in plastic sleeves so that the paper labels can be removed or changed without impacting the boxes.

Associated records, which total 20.30 ft^2, also have a high rehabilitation effort. In order for the collections to meet the standards of 36 CFR Part 79, the following steps should be taken: (1) remove all foreign objects (e.g., paper clips, staples) and place records in appropriate archival containers (e.g., acid-free file boxes and folders), (2) store records in a manner that will protect them from fire, theft, damage, and destruction, (3) create a folder-by-folder finding aid for the collection, and (4) create a preservation/security copy of the records and store it in a secure, off-site location.

Recommendations

1. Install security measures that include detection features (e.g., intrusion alarms).

2. Install a fire-suppression system.

3. Develop the following written policies and procedures: scope of collections statement, fire, emergency, and pest management plans.

3. Cover windows with appropriate shades/blinds to protect the collections from UV rays.

4. Protect free-standing exhibits from accidental damage (e.g., cover/display with appropriate barriers/materials).

5. Move maps from the bunkhouse to the visitor's center.

6. Develop a finding aid for all associated records and make preservation copies of the most fragile documentation.

Comments/Issues

1. A limited number of education programs can be implemented by the refuge because of its location.

2. Collections may be housed at the University of Idaho with Dr. Herb Maschner, as archaeological permits have been issued to him on numerous occasions. FWS should communicate with Dr. Maschner to determine the amount of materials he has in his possession.

3. No scope of collections has been established at the refuge.

4. No human remains or NAGPRA-related materials are stored at the refuge.

5. Copies of Alaska Maritime records (0.25 linear feet) are stored at Izembek NWR.

3

Crab Orchard National Wildlife Refuge
Marion, Illinois

Museum Property Management at Crab Orchard NWR

Museum property is stored at two facilities at the Crab Orchard NWR—the Administration Building and visitor's center (Figures 12 and 13). The Refuge was visited from May 10 to 12, 2006.

Figure 12. Exterior view of the Crab Orchard NWR administration building.

Figure 13. Exterior view of the Crab Orchard NWR visitor's center.

Within the Crab Orchard administration building, one room houses museum property—the resource room. In the visitor's center, three rooms house museum property—two exhibit galleries (VC1 and VC2) and the slide/photographic storage room (VC3). Tables 10 and 11 list the museum property disciplines and totals examined during the assessment at these facilities. Detailed building and storage room conditions are described in the Museum Property Storage summary.

Table 10.
Museum Property Disciplines and Totals at Crab Orchard NWR Administration Building

Administration Building	Disciplines[1]	Extent
X	Archaeology	0.08 ft^3
X	Art[2]	1.16 ft^3
X	Associated Documents (Records)[2]	6.26 linear feet

[1] Only those museum property disciplines in the Administration Building are listed in the table.
[2] Includes photographs and oversized materials.

Table 11.
Museum Property Disciplines and Totals at Crab Orchard NWR Visitor's Center

Storage Location				
VC1	VC2	VC3	Disciplines[1]	Extent
	X		Archaeology	2.65 ft^3
		X	Associated Documents (Records)[2]	0.17 linear feet
X	X		Zoology	34 mounted or representative specimens

[1] Only those museum property disciplines in the visitor's center are listed in the table.
[2] Includes photographs and oversized materials.

Museum Property Storage Summary

Administration Building

Resource Room

The resource room is a combination storage/meeting room that currently holds archaeological materials, associated records, and art. The room is approximately eighty-to-ninety percent full. None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Collections are stored in a variety of map and metal file (regular and fire-proof) cabinets, or on the floor (Figures 14 and 15). No windows are present in the room, and no hazardous materials are stored there. A first aid-station is, however, located in the entrance to the room.

Figure 14. Metal cabinets are used to house archaeological artifacts and associated records at Crab Orchard NWR. Art pieces are stored on the floor next to the cabinet.

Figure 15. Map file cabinet in the resource room at Crab Orchard NWR.

Museum Property Housing Summary

Archaeological—Less than one-half cubic foot (0.08 ft^3) of archaeological materials are located in the resource room. The prehistoric artifacts are surface finds that have been located on the refuge throughout the years. The materials are stored in a metal file cabinet drawer in a small acidic box, both of which are not labeled. Artifacts have been cleaned and are stored loose in the box (Figure 16). None of the artifacts are labeled.

Figure 16. Close-up view of archaeological artifacts at Crab Orchard NWR.

Figure 17. Close-up view of art pieces at Crab Orchard NWR.

Art—Five pieces totaling approximately 1.16 linear feet are stored on the floor (Figure 17). Four of the pieces are aerial photographs/prints of various places around the refuge. The fifth piece is an image of a whitetail deer made out of 13 different tree barks by a former refuge employee. The piece is labeled with the artist, materials used, and date.

Associated Records—6.26 linear feet of records are stored in one metal file cabinet, one map file cabinet, and three Fire King® fireproof file cabinets. The records include archaeological reports, narratives, maps, blueprints, aerial photographs, a scrapbook, land abstracts/acquisitions information, color and black-and-white photographs, a 16-mm film reel, a ledger dated 1862/1863 containing old letters and abstracts of the area, one arithmetic book from 1877, and one monthly examination report dated 1887 (Figure 18). It is unknown how the refuge acquired the latter three items from the 1800s as they were found in a drawer at the refuge. Records are stored in a variety of secondary containers—acidic, expandable, and hanging folders, binders, envelopes, boxes, plastic sleeves, and loose within the drawers. All of the records have been sorted and cleaned, and approximately seventy five percent are labeled. A simple finding-aid (subject-by-subject format) has also been created. A large quantity of staples, rubber bands, binders, and paper clips were noted.

Figure 18. View of associated records in the administrative building at Crab Orchard NWR.

Visitor's Center

Exhibit Gallery 1

This exhibit gallery (VC1) is located at the entrance to the visitor's center. Only zoological specimens (mounts, skulls, furs, and an aquarium with live fish) are located in the gallery. A small gift shop and office area is also located in this area. The room is eighty-to-ninety percent full. None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Two doors and windows are present. Windows are protected with blinds; however the doors are not. All of the materials have been cleaned, mounted, and labeled.

Museum Property Housing Summary

Zoological—A total of 27 zoological specimens are located in the exhibit gallery. Specimens are displayed loose for hands-on exhibits or in enclosed exhibit cases.

Exhibit Gallery 2

Adjacent to exhibit gallery one, this gallery (VC 2) encompasses 450 square feet and currently exhibits archaeological collections and zoological specimens. The room, which is approximately fifty percent full, also contains an audiovisual viewing section and a hands-on station. None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Materials are displayed on table tops, loose on ceiling rafters, or in enclosed plastic exhibit cases. No windows are present in this room; however, a set of emergency exit doors are located along the south wall.

Museum Property Housing Summary

Archaeological—2.65 ft^3 of archaeological collections are stored in this room. Fifty-two prehistoric artifacts are stored in four enclosed plastic exhibit cases of the same size (Figure 19); however, 14 of the artifacts are reproductions. Four historic artifacts are stored in three enclosed plastic exhibit cases of various sizes. These artifacts are part of the refuge's larger Maxwell collection, which currently are housed at Southern Illinois University in Carbondale (SIUC). According to standard museum practice, SIUC maintains long-term loan documentation for these artifacts. The artifacts have been mounted to wallboard with plastic string in the exhibit cases; however, it could not be determined if these materials are archival quality. According to the artifact inventory provided by Crab Orchard personnel, artifacts have been assigned accession numbers, but it is unknown if any of them have been directly labeled with either an accession or a catalog number.

Figure 19. Archaeological display in the Crab Orchard NWR visitor's center.

Figure 20. Hands-on display in the Crab Orchard NWR visitor's center.

Zoological—A total of seven zoological specimens are located in the exhibit hallway and are displayed in a variety of ways—on table tops for hands-on exhibits (Figure 20), loose on ceiling rafters, or in one enclosed plastic exhibit case.

Slide/Photographic Storage Room
This room (VC 3) holds associated records (slides) only. The room, which is approximately eighty percent full, also houses various educational refuge materials (i.e., poster, brochures). None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. No windows are present, and no hazardous materials are stored in this room.

Museum Property Housing Summary
Associated Records—Less than one linear foot (0.17) of slides are stored in this room. Slides are stored loose in the drawers of a metal slide cabinet. All of the slides have been sorted, and approximately eighty-to-ninety percent of the slides are labeled. Slides are directly labeled in pencil or ink with the refuge, year, and slide number; however, a finding aid was not located for the slide materials.

36 CFR Part 79 Compliance

Building Condition and Structural Adequacy

The Administration Building was constructed in 1980, is easily accessible from major highways, and has adequate parking for visitors and researchers. The building has no loading dock and is not located in a hurricane zone or near nuclear facilities; however, it is located in a floodplain and an earthquake zone. The one-story building has a concrete foundation, wood siding and stone exterior walls, and a shingled roof. No external renovations have taken place on the building. The staff has not observed any cracks or leaks in either the foundation or the roof. Approximately twenty-five-to-thirty steel-framed windows are present throughout the building. All of the windows are watertight, and most are airtight. Building utilities include running water, telephone, electrical, and intranet services. Public restrooms and a break room are also present in the building.

The visitor's center was constructed in 1944–1945 as a firehouse, but was converted and remodeled in 1980 to its present use. It is easily accessible from major highways and has abundant parking for visitors and researchers. The building has no loading dock and is not located in a hurricane zone or near nuclear facilities; however, it is located in a floodplain and an earthquake zone. The one-story building has a concrete foundation, wood siding exterior walls, and a shingled roof. Both external and internal renovations occurred in 1988 and 1994. The staff has not observed any cracks or leaks in either the foundation or the roof. Approximately fifteen-to-twenty steel-framed windows are present throughout the building. All of the windows are watertight, and most are airtight. Building utilities include running water, telephone, electrical, and intranet services. Public restrooms are also present in the building.

Heating, Ventilating, and Air Conditioning Systems, and Environmental Controls

At the Administration Building, a geothermic HVAC system furnishes the structure's heating and air-conditioning needs, while a central air conditioning and forced-air heat system furnishes the heat and air-conditioning needs at the visitor's center. No dust filters are present in either

building. Refuge personnel clean and maintain both buildings on a weekly basis. Neither temperature nor humidity are monitored or controlled within either building.

Space Allocation and Hazardous Chemical Use and Storage

The Administration Building encompasses 2,400 ft^2 and has the following components: artifact holding area, records storage room, offices, gun safes, a break room, and a materials/supplies storage room. No hazardous chemicals are used or stored at the building except for basic cleaning supplies/agents. No ventilation system or emergency eye wash/shower is located in the building; however, a first aid kit and station are located in the Resource Room.

The visitor's center encompasses 2,000 ft^2 and has the following components: a zoological storage room, records/slide storage room, exhibit gallery/audiovisual room, offices, gift shop, and materials/supplies storage room. No hazardous chemicals are used or stored at the building except for basic cleaning supplies/agents.

Security System

At the Administration Building, all major entrances and office doors are secured with key or dead-bolt locks, while all windows are secured with window locks. Motion detectors are located throughout the building. No other security-detection system is installed. One unauthorized entry occurred in 1991, and computer equipment and guns were stolen. Fortunately, the suspects were caught.

Security for the visitor's center consists of key locks through the main entrance, while all windows are secured with window locks. Motion detectors are also located throughout the building. An intrusion alarm that is wired to both the police department and a security company is also in place. Three unauthorized entries have occurred since 1994; however, nothing was taken from the building in any of these occurrences.

Fire-Detection and-Suppression Systems

The Administration Building possesses smoke detectors throughout the building and fire alarms that are wired to the fire department. Fire extinguishers, which were last inspected in October of 2005, are also present at key locations throughout the building.

The visitor's center possesses smoke detectors and manual fire alarms throughout the building. A fire alarm that is wired to the fire department is present. Fire extinguishers, which were last inspected in October of 2005, are also present at key locations throughout the building.

Pest Management

Both buildings at Crab Orchard NWR have a pest management plan in place that includes monitoring and control of pests; however, there is no written plan. Sticky insect strips are placed throughout the buildings and are checked quarterly by a professional pest-management company. Spraying of both facilities is also conducted by a professional pest-management company twice a year. No infestations, except for the occasional spider, have been noted by the refuge staff at either building.

36 CFR Part 79 Compliance Summary

Neither the Administration Building or the visitor's center housing museum property at Crab Orchard NWR meet the compliance criteria with 36 CFR Part 79 (i.e., environmental controls, security, fire safety, and pest management). A number of corrective actions are necessary in order for the buildings to comply with the minimum standards. For 36 CFR Part 79 building criteria and attributes, see Appendix 1.

411 DM Repository Evaluation Summary

A facility condition assessment using the 411 DM Facility Checklist was conducted on the two buildings that hold museum property at Crab Orchard NWR. The Administrative Building received a poor condition, with an overall score of 13%, while the visitor's center also received a received a poor condition, with an overall score of 30% (Table 12). The condition score includes individual checklist scores for each space/room in which museum property is held at the refuge. For individual facility/room checklists, criteria, and definitions, please see Appendix 1.

Table 12.
411 DM Facility Checklist Summary at Crab Orchard NWR

Building	Space/Room Type[1]	Number Rooms	Standards Met	Applicable Standards	Condition[2]	Percentage
Administration Building	Administrative Office	1	2	16	Poor	13%
Overall Total		**1**				**13%**
Visitor's Center	Administrative Office (VC 3)	1	4	14	Poor	29%
	Exhibit (VC 1-2)	2	11	32	Poor	34%
	Storage	0	n/a	n/a	n/a	n/a
Overall Total		**3**				**33%**

1. Administrative Office includes offices, lobbies, meeting rooms, hallways, and any other non-dedicated space within a building used to house museum property. Exhibit rooms includes any space dedicated to display original documents, objects, or specimens (or copies thereof) for educational and cultural purposes. Storage rooms include space designated for the safekeeping of museum property not currently on exhibition.
2. A *poor* condition is assigned when 49 percent or less of the applicable standards on the 411 DM Checklist are met for all spaces (storage, exhibit, and administrative office spaces) holding a collection. A *fair* condition is assigned when 50 to 69 percent of the applicable standards on the 411 DM Checklist are met. A *good* condition is assigned when 70 percent or greater of the applicable standards on the 411 DM Checklist are met. Ratings are generated by calculating the percentage by dividing the total applicable standards met for all spaces for a collection (i.e., location) by the total applicable standards for all spaces for a collection.

Rooms in both buildings received a rating of poor as they did not meet the following 411 DM general standards: lack of written policies or procedures dealing with the management and long-term care of museum property (i.e., control of access and handling of museum property procedures, and emergency, fire safety, and pest management plans), non-maintenance of recording and monitoring temperature, relative humidity, and light fluctuations, lack of appropriate museum-quality containers, and the proper museum practices when displaying/exhibiting museum property.

In order for both buildings to improve their rating to fair or good, FWS and Crab Orchard NWR must first develop management standards that address the proper care and preservation of the museum property in their possession.

Rehabilitation Effort Summary and Recommendations

Archaeological collections and associated records housed at Crab Orchard NWR require certain tasks be completed before they are considered to be compliant with federal and professional curation standards. Rehabilitation effort is based upon the completion of specific tasks that are associated with bringing the materials into compliance with 36 CFR Part 79. A designation of low is assigned in instances where one-to-two tasks are required; high is assigned in instances where more than two tasks are required. Compliance tasks and rehabilitation costs for archaeological collections are listed in Table 13. Rehabilitation costs and formulas can be found in Appendix 3.

Table 13.
Collections Rehabilitation Summary at Crab Orchard NWR

Collection Type	Location	Extent (cubic or linear feet)	Rehabilitation Effort[1]	Task[2]	Complete	Incomplete	Estimated Rehabilitation Cost
Archaeological	Admin Bldg.	0.08	High	Sorting	X		n/a
				Bagging		X	$25
				Acid-free insert		X	$25
				Boxes		X	$10
				Labels		X	$10
Associated Documents	Admin Bldg.	6.26	High	Arrangement	X		n/a
				Folders		X	$3,900
				Labels		X	$3,900
				Boxes/Fireproof Cabinets	X		n/a
				Finding Aids		X	$4,500
				Security Copy		X	$19,700
Archaeological [a]	VC2	2.65	High	Sorting	X		n/a
				Bagging		X	$800
				Acid-free insert		X	$800
				Boxes		X	$300
				Labels		X	$300
Associated Documents	VC3	0.17	High	Arrangement	X		n/a
				Folders		X	$100
				Labels		X	$100
				Boxes/Fireproof Cabinets		X	$100
				Finding Aids		X	$200
				Security Copy		X	$600

Notes:
1. Rehabilitation effort is based upon the completion of specific tasks that are associated with bringing the **objects** into compliance with 36 CFR Part 79. Tasks are described as (1) Sorting by provenience and materials unless otherwise noted; (2) Bagging—all materials are placed in appropriate archival-quality, zip-lock bags; (3) Acid-free inserts are created and placed inside each new bag; (4) Boxes—all rebagged objects are placed into new archival boxes; and (5) Labels are applied to all new boxes.
2. Rehabilitation effort is based upon the completion of specific tasks that are associated with bringing the records into compliance with 36 CFR Part 79. Tasks are described as (1) Arrangement of records in a logical order; (2) Repackaging all records in archival-quality secondary containers; (3) Labels—all secondary containers are labeled in pencil or indelible ink; (4) Boxes—all records are placed into fireproof cabinets or new archival cardboard boxes with acid-free labels that are applied to new boxes; (5) Finding Aids—a formal description of the records collection is prepared; and (6) Preservation/Security Copies have been made and are stored off-site.
3. Rehabilitation costs are rounded up to the nearest hundred dollar amount.
[a] Artifacts are currently on display in an exhibit case and are on long-term loan from the Southern Illinois University, Carbondale.

Archaeological collections (2.73 ft^3) at the Crab Orchard NWR have a high rehabilitation effort. In order for the collections to meet the standards of 36 CFR Part 79, the following tasks should be performed: (1) place artifacts in 4-mil zip-lock bags, (2) insert acid-free tags into the bags listing, at the very minimum, collector, date, and location (3) place artifacts into new archival containers (e.g., acid-free box or fire-proof cabinet), and (4) apply labels to the exterior of the new containers. If collections are rehoused in archival boxes, acid-free box labels should be placed in plastic sleeves so that the paper labels can be removed or changed without impacting the boxes.

Associated records, which total 6.43 ft^2, also have a high rehabilitation effort. In order for the collections to meet the standards of 36 CFR Part 79, the following tasks should be performed: (1) remove all foreign objects (e.g., paper clips, staples) and place records in appropriate archival containers (e.g., acid-free file boxes and folders),
(2) store records in a manner that will protect them from fire, theft, damage, and destruction, (3) create a folder-by-folder finding aid for all the records, and (4) create a preservation/security copy of the records and store it in a secure, off-site location.

Recommendations

1. Install an intrusion-alarm system in the administration building.

2. Install a fire-suppression system in both buildings.

3. Develop the following written policies and procedures that specify museum property: scope of collections statement, fire, emergency, and pest management plans.

4. Place all records within the same building.

5. FWS should determine if the records from the 1800s in the Administration Building should be classified as museum property. Although the materials are historic and were found near or on refuge land and contain information pertaining to the area, they do not seem to fit into the classification of museum property. However, the final decision should be ascertained by FWS.

Comments/Issues

1. Education programs have been implemented at the refuge. Refuge personnel travel to various schools in the area to give zoological presentations, using live specimens, and endangered species presentations, using examples of furs, leathers, and hides.

2. Most of the refuge collection (archaeological and associated records) is curated at Southern Illinois University, Carbondale. A curation agreement developed in the 1980s is still in place; however, SIUC has expressed interest in revising this agreement. Human remains and other NAGPRA-related items are associated with the collections.

3. Artifacts stored in the visitor's center are part of the refuge's larger Maxwell collection, which is also housed at SIUC. According to standard museum practice, SIUC maintains long-term loan documentation for these artifacts until they are returned for permanent curation following the conclusion of the loan.

4. Archaeological collections from work conducted at the refuge in the 1940s are currently stored at other facilities: Illinois State Museum, Logan Museum of Anthropology at Beloit University, and the University of Michigan, Museum of Anthropology. Some human remains may be stored with Dr. Della Cook at Indiana State University. FWS should contact Indiana State University to determine if they house any Crab Orchard materials.

5. A scope of collections has been established at the refuge.

6. The refuge employs twenty-seven full time personnel.

4

Marais des Cygnes National Wildlife Refuge
Pleasanton, Kansas

Museum Property Management at Marais des Cygnes NWR

Museum property is stored at one building at the Marais des Cygnes NWR—the headquarters' building (Figure 21). The Refuge was visited from March 26 to 28, 2006.

Figure 21. Exterior view of the Marais des Cygnes NWR headquarters' building.

Within the Marais des Cygnes headquarters' building, two rooms house museum property—an office/lobby (HQ1) and a meeting room (HQ2). Table 14 lists the museum property disciplines and totals examined during the assessment at these facilities. Detailed building and storage room conditions are described in the Museum Property Storage summary.

Table 14.
Museum Property Disciplines and Totals at
Marais des Cygnes NWR Headquarters Building

Storage Location			
HQ1	**HQ2**	**Disciplines[1]**	**Extent**
X	X	Archaeology	6.46 ft^3
X	X	Associated Documents (Records) [2]	1.18 linear feet
X		Geology	1.83 ft^3
X		Zoology	12.91 ft^3

[1] Only those museum property disciplines in the headquarters building are listed in the table.
[2] Includes photographs and oversized materials.

Museum Property Storage Summary

Lobby/Office

Located inside the building entrance, the lobby/office (HQ 1) currently holds archaeological materials, associated records, and geological and zoological specimens. The room is fifty-to-sixty percent full. None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Materials are stored in lateral file cabinets, in a glass exhibit case, or loose on desk-tops (Figure 22). Two entrance doors and three windows are present. Windows are protected with blinds; however, the doors are not. No hazardous materials are stored in the room. All of the materials have been cleaned, mounted, and approximately fifty percent have been labeled.

Figure 22. View of the display case and hands-on exhibit at Marais des Cygnes NWR.

Museum Property Housing Summary

Archaeological—Six cubic feet of archaeological materials are stored in the office/lobby. The prehistoric and historic artifacts are surface finds that have been recovered from the refuge throughout the years. Artifacts have been cleaned and are stored loose on shelves in a glass exhibit case (Figure 23). Some artifacts are labeled directly in marker or with index cards with the location or an artifact description.

Associated Records—Less than one linear foot (0.75) of records are stored in one lateral metal file cabinet. Records are sorted by year and include reports (narratives), maps, and blueprints. Secondary containers include expandable, manila, or hanging folders within the drawers. The records have been sorted, and approximately seventy-five percent are labeled. A large quantity of staples, rubber bands, and binder and paper clips were noted.

Geological—A small number (1.83 ft^3) of geological materials are present at Marais des Cygnes. Materials are stored loose on a shelf in the glass exhibit case (Figure 24). All of the materials have been sorted and cleaned; however, only one item has been labeled.

Figure 23. Prehistoric artifacts from Marais des Cygnes NWR.

Figure 24. Geological specimens from Marais des Cygnes NWR.

Zoological—Less than three cubic feet (2.91 ft^3) of zoological specimens are located in the office/lobby. Specimens are stored (1) loose for hands-on exhibits, (2) in a glass exhibit case, or (3) loose on top of the exhibit case. All of the specimens have been sorted and cleaned and approximately seventy-five percent are labeled with the species name. One specimen has been mounted.

Meeting Room

The meeting room (HQ 2) currently houses archaeological materials and associated records. The room is approximately seventy-five percent full. None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Materials are stored on top of or in map file cabinets (Figure 25). One window is present in the room and is protected with miniblinds. No hazardous materials are stored in the room; however, a kitchen area adjacent to the room does house basic cleaning supplies/agents. All of the materials have

been sorted and cleaned. None of the archaeological materials have been labeled, and approximately half of the records have been labeled.

Figure 25. Map file cabinets in the meeting room at Marais des Cygnes NWR.

Museum Property Housing Summary

Archaeological—Less than one-half cubic foot (0.46 ft^3) of archaeological materials is located in the meeting room. The prehistoric artifacts are surface finds that have been recovered from the refuge throughout the years. Artifacts are stored in two small acidic boxes, both of which are not labeled. Artifacts have been cleaned and are stored loose in the box (Figure 26). None of the artifacts are labeled.

Figure 26. Box of archaeological artifacts at Marais des Cygnes NWR.

Associated Records—Oversized maps and photographs totaling 0.43 linear feet are stored in this room. Maps are stored loose within the drawers or in acidic map tubes on top of the file cabinets. Aerial and black and white photographs are stored (1) loose within the drawers (Figure 27), (2) glued to cardboard pieces, or (3) in acidic cardboard containers. Maps in the file drawers are sorted by year. None of the maps are labeled; approximately twenty-five percent of the photographs are either labeled in ink or pencil with the date, event, or location.

Figure 27. View of aerial photographs in the map file drawer at Marais des Cygnes NWR.

36 CFR Part 79 Compliance

Building Condition and Structural Adequacy

The Marais des Cygnes NWR headquarters' building was constructed in 2000, is easily accessible from major highways, but has limited parking for visitors and researchers. The building has no loading dock and is not located in a hurricane zone or near nuclear facilities; however, it is located in a floodplain and an earthquake zone. The building is a modular home and has a concrete block foundation, prefabricated board/stucco exterior walls, and a metal roof coated with asphalt and tar. No external renovations have taken place on the building. No cracks are present in either the foundation or the roof. The building has eight aluminum-framed windows, all of which are watertight and airtight. Building utilities include running water, telephone, electrical, and intranet services. Public restrooms also are present.

Heating, Ventilating, and Air Conditioning Systems, and Environmental Controls

A central air conditioning and a propane heat system furnish the structure's heating and cooling needs. Dust filters are present on the heating system only. Refuge personnel clean the building on a weekly basis. Neither temperature nor humidity are monitored or controlled within the building.

Space Allocation and Hazardous Chemical Use and Storage

The headquarters' building encompasses 1,250 ft^2 and has the following components: meeting/records room, exhibit area, kitchen/break room, gun safe, and offices. No hazardous chemicals are used or stored in the building except for basic cleaning supplies/agents.

Security System

Major entrances and office doors are secured with key locks and dead-bolt locks, while all windows are secured with window locks. Motion lights are located outside the building. No security-detection system is installed. There have been no episodes of unauthorized entry.

Fire-Detection and-Suppression Systems

The headquarters' building possesses smoke detectors that are located in the building. Fire extinguishers, which were last inspected in June 2005, are also present at key locations**.** No other fire-detection devices are in place and no fire-suppression system is present.

Pest Management

Regular monitoring and control of pests as defined in 36 CFR Part 79 is conducted at the headquarters' building. Refuge personnel monitor storage areas as needed, and spraying is conducted by a professional pest-management company. No infestations have been noted by the refuge staff within the building.

36 CFR Part 79 Compliance Summary

The headquarters' building housing museum property at Marais des Cygnes NWR does not meet compliance with 36 CFR Part 79 (i.e., environmental controls, security, fire safety, and pest management). A number of corrective actions are necessary to take place in order for the buildings to comply with the minimum standards. For 36 CFR Part 79 building criteria and attributes, see Appendix 1.

411 DM Repository Evaluation Summary

A facility condition assessment using the 411 DM Facility Checklist was conducted on the headquarters' building at Marais des Cygnes NWR. The building received a poor condition, with an overall score of 33% (Table 15). The condition score includes individual checklist scores for each space/room in which museum property is held at the refuge. For individual facility/room checklists, criteria, and definitions, please see Appendix 1.

Table 15.
411 DM Facility Checklist Summary at Marais des Cygnes NWR

Building	Space/Room Type[1]	Number Rooms	Standards Met	Applicable Standards	Condition[2]	Percentage
Headquarters' Building	Administrative Office (HQ1-2)	2	5	15	Poor	33%
	Exhibit	0	n/a	n/a	n/a	n/a
	Storage	0	n/a	n/a	n/a	n/a
Overall Total		**2**				**33%**

1. Administrative Office includes offices, lobbies, meeting rooms, hallways, and any other non-dedicated space within a building used to house museum property. Exhibit rooms includes any space dedicated to display original documents, objects, or specimens (or copies thereof) for educational and cultural purposes. Storage rooms include space designated for the safekeeping of museum property not currently on exhibition.
2. A *poor* condition is assigned when 49 percent or less of the applicable standards on the 411 DM Checklist are met for all spaces (storage, exhibit, and administrative office spaces) holding a collection. A *fair* condition is assigned when 50 to 69 percent of the applicable standards on the 411 DM Checklist are met. A *good* condition is assigned when 70 percent or greater of the applicable standards on the 411 DM Checklist are met. Ratings are generated by calculating the percentage by dividing the total applicable standards met for all spaces for a collection (i.e., location) by the total applicable standards for all spaces for a collection.

All rooms received a rating of poor as they did not meet the following 411 DM general standards: written policies or procedures dealing with the management and long-term care of museum property (i.e., control of access and handling of museum property procedures, and emergency, fire safety, and pest management plans); maintenance of recording and monitoring temperature, relative humidity, and light fluctuations; appropriate museum-quality containers; and the proper museum practices when displaying/exhibiting museum property.

In order for the facility to improve its rating to fair or good, FWS and Marais des Cygnes NWR must first develop management standards that address the proper care and preservation for the museum property in their possession.

Rehabilitation Effort Summary and Recommendations

Archaeological collections and associated records housed at Marais des Cygnes NWR require certain tasks be completed before they are considered to be compliant with federal and professional curation standards. Rehabilitation effort is based upon the completion of specific tasks that are associated with bringing the materials into compliance with 36 CFR Part 79. A designation of low is assigned in instances where one-to-two tasks are required; high is assigned in instances where more than two tasks are required. Compliance tasks and rehabilitation costs for archaeological collections are listed in Table 16. Rehabilitation costs and formulas can be found in Appendix 3.

Table 16.
Collections Rehabilitation Summary at Marais des Cygnes NWR

Collection Type	Location	Extent (cubic or linear feet)	Rehabilitation Effort	Task	Complete	Incomplete	Estimated Rehabilitation Cost
Archaeological	HQ1	6	High	Sorting	X		n/a
				Bagging		X	$1,700
				Acid-free insert		X	$1,700
				Boxes		X	$600
				Labels		X	$600
Associated Documents	HQ1	0.75	High	Arrangement	X		n/a
				Folders		X	$500
				Labels		X	$500
				Boxes/Fireproof Cabinets		X	$500
				Finding Aids		X	$600
				Security Copy		X	$2,400
Archaeological	HQ2	0.46	High	Sorting	X		n/a
				Bagging		X	$150
				Acid-free insert		X	$150
				Boxes		X	$50
				Labels		X	$50
Associated Documents	HQ2	0.43	High	Arrangement	X		n/a
				Folders		X	$300
				Labels		X	$300
				Boxes/Fireproof Cabinets		X	$300
				Finding Aids		X	$400
				Security Copy		X	$1,400

Notes:
1. Rehabilitation effort is based upon the completion of specific tasks that are associated with bringing the **objects** into compliance with 36 CFR Part 79. Tasks are described as (1) Sorting by provenience and materials unless otherwise noted; (2) Bagging—all materials are placed in appropriate archival-quality, zip-lock bags; (3) Acid-free inserts are created and placed inside each new bag; (4) Boxes—all rebagged objects are placed into new archival boxes; and (5) Labels are applied to all new boxes.
2. Rehabilitation effort is based upon the completion of specific tasks that are associated with bringing the records into compliance with 36 CFR Part 79. Tasks are described as (1) Arrangement of records in a logical order; (2) Repackaging all records in archival-quality secondary containers; (3) Labels—all secondary containers are labeled in pencil or indelible ink; (4) Boxes—all records are placed into fireproof cabinets or new archival cardboard boxes with acid-free labels that are applied to new boxes; (5) Finding Aids—a formal description of the records collection is prepared; and (6) Preservation/Security Copies have been made and are stored off-site.
3. Rehabilitation costs are rounded up to the nearest hundred dollar amount.

Archaeological collections (6.46 ft^3) at Marais des Cygnes NWR have a high rehabilitation effort. In order for the collections to meet the standards of 36 CFR Part 79, the following tasks should be performed: (1) place artifacts in 4-mil zip-lock bags, (2) insert acid-free tags into the bags listing, at the very minimum, collector, date, and location (3) place artifacts into new archival containers (e.g., acid-free box or fire-proof cabinet), and (4) apply labels to the exterior of the new containers. If collections are rehoused in archival boxes, acid-free box labels should be placed in plastic sleeves so that the paper labels can be removed or changed without impacting the boxes.

Associated records, which total 1.18 ft^2, also have a high rehabilitation effort. In order for the collections to meet the standards of 36 CFR Part 79, the following tasks should be performed: (1) remove all foreign objects (e.g., paper clips, staples) and place records in appropriate archival containers (e.g., acid-free file boxes and folders),
(2) store records in a manner that will protect them from fire, theft, damage, and destruction, (3) create a folder-by-folder finding aid for all the records, and (4) create a preservation/security copy of the records and store it in a secure, off-site location.

Recommendations

1. Install security measures that include detection features (e.g., intrusion alarms).

2. Install a fire-suppression system.

3. Develop the following written policies and procedures: scope of collections statement, fire, emergency, and pest management plans.

4. Place all museum property records within the same room.

Comments/Issues

1. No education programs have been implemented at the refuge.

2. No scope of collections has been established at the refuge.

3. No human remains or NAGPRA-related materials are stored at the refuge.

4. A portion of the zoological specimens in the glass exhibit case are purchased replicas and were not counted as museum property.

5. Marias des Cygnes is one of the newest refuges in the system—established in 1992. Before 1992, the land was owned by a mining company.

5

Mingo National Wildlife Refuge
Puxico, Missouri

Museum Property Management at Mingo NWR

Museum property is stored at one building at the Mingo NWR—the visitor's center (Figure 28). The Refuge was visited from May 8 to 9, 2006.

Figure 28. Exterior view of the Mingo NWR visitor's center.

Within the Mingo visitor's center, five rooms house museum property—an exhibit gallery (VC1), which is located on the first floor, and four rooms which are located in the basement: map and general storage room (VC2), photograph/audiovisual storage room (VC3), vault room (VC4), and a hallway (VC5). Table 17 lists the museum property disciplines and totals examined during the assessment at these facilities. Detailed building and storage room conditions are described in the Museum Property Storage summary.

Table 17.
Museum Property Disciplines and Totals at
Mingo NWR Visitor's Center

Storage Location						
VC1	**VC2**	**VC3**	**VC4**	**VC5**	**Disciplines[1]**	**Extent**
X			X		Archaeology	36.36 ft^3
	X	X	X	X	Associated Documents (Records)[2]	19.11 linear feet
			X		History	2.67 ft^3
X	X				Zoology	56 mounted or representative specimens

[1] Only those museum property disciplines in the Administration Building are listed in the table.
[2] Includes photographs and oversized materials.

Museum Property Storage Summary

Exhibit Gallery

The gallery (VC1), which is located at the entrance to the visitor's center, exhibits archaeological materials and zoological specimens (mounts, skulls, furs, an aquarium, and one live biological specimen). A small gift shop, office area, and two audiovisual viewing rooms also are located in this area. The room is ninety percent full. None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Materials are displayed loose on hands-on exhibits, in enclosed plastic exhibit cases, or freestanding on floor mounts/displays (Figure 29). Four entrance doors and 18 windows are present. Windows are protected with blinds; however, the doors are not. All of the materials have been cleaned, mounted, and labeled.

Figure 29. Zoological specimens in the exhibit gallery.

Figure 30. Archaeological artifacts in the exhibit gallery.

Museum Property Housing Summary

Archaeological—Two enclosed plastic exhibit cases (Figure 30) display historic and prehistoric artifacts (19.97 ft^3). Ten historic metal and wood artifacts are displayed, while 21 lithic and one ceramic artifact are located in the prehistoric display. Prehistoric artifacts, which were collected off the refuge, are currently on long-term loan from the University of Missouri-Columbia (UMC) as they maintain the long-term documentation for these artifacts and will be returned following the conclusion of the loan. Artifacts have been mounted to wallboard in the exhibit cases with plastic string; however, it is unknown if the materials are archival. According to the artifact inventory located during the assessment, artifacts have been assigned accession numbers, but it is unknown if any of them have been directly labeled with either an accession or a catalog number.

Zoological—A total of 48 zoological specimens are located in the exhibit gallery. Specimens are displayed loose for hands-on exhibits, in enclosed exhibit cases, or freestanding on floor mounts/displays. Specimens are mounted and approximately seventy-five percent are labeled with the species name.

Map/General Storage Room

This storage room (VC 2) encompasses 150 ft^2 and currently holds associated records and zoological specimens (Figure 31). The room, which is at capacity, also houses excess supplies. None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Associated records are stored in a letter-sized file cabinet, two metal slide cabinets, and three wooden-and-metal map file cabinets, while zoological specimens are stored loose throughout the room. No windows are present in the room, and no hazardous materials are stored there. All of the materials have been sorted and cleaned and approximately half have been labeled.

Figure 31. View of map/general storage room.

Museum Property Housing Summary

Associated Records—Oversized maps, blueprints, aerial photographs, slides, and associated records totaling 3.68 linear feet are stored in this room. Records in the metal file cabinet are

stored in manila folders or hanging file folders. Maps are stored in three wooden-and-metal file cabinets loose within the drawers. Slides are stored in metal sliding frames, acidic boxes, plastic slide sleeves, or loose within the drawers. All of the records have been sorted by subject or year; however, approximately half have been labeled. A large quantity of staples, rubber bands, and paper clips were noted.

Zoological—A total of eight zoological specimens are located in this room. Specimens are displayed loose on tops of various shelves and file cabinets. Five specimens are mounted; however, none of them are labeled.

Photograph/Audiovisual Storage Room

The photograph/audiovisual storage room (VC 3), which is located off the map/general storage room, currently houses photographic records only. The room, which is approximately ninety percent full, also houses audiovisual supplies (e.g., televisions, slide projectors). None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Photographs are stored on a cabinet top in wooden drawers or in archival boxes (Figures 32 and 33). No windows are present in the room, and no hazardous materials are stored there. All of the materials have been sorted and cleaned and approximately forty-to-fifty percent are labeled/identified.

Figure 32. Wooden cabinets used to house associated records.

Figure 33. Close-up view of wooden storage drawers.

Museum Property Housing Summary

Associated Records—5.78 linear feet of photographs are stored in this room. Photographs are stored in a variety of secondary containers—photographic envelopes, photographs stapled or glued to index cards, hanging file folders, plastic bags, or loose in the drawers and boxes. Photographs are either labeled in ink or pencil with the date or event. Photographs are roughly sorted by year, and no finding-aid has been created. A large number of paper clips and adhesives are attached to the photographs.

Vault Room

The vault room (VC 4) also is accessed by way of the map/general storage room, and currently houses historic archaeological materials, associated records (maps), and historical objects. The room is not technically a vault, but it is referred to as such by refuge personnel as it locked at all times and houses valuable items. The room, which is approximately ninety percent full, also houses office and educational supplies, and clothing items. None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Materials are stored on wooden shelves, acidic boxes, or loose on the floor. No windows are present in the room; however, a bottle of a hazard chemical (Phenol®) is stored on the shelves with the artifacts. All of the materials have been sorted but not cleaned, and approximately twenty percent are labeled.

Museum Property Housing Summary

Archaeological—16.39 ft^3 of historic artifacts are stored in this room. Artifacts—metal, ceramic, and glass objects (Figure 34)—are stored loose on the shelves. Fifty percent of the artifacts have been cleaned; however, only twenty-five percent have been labeled. Artifacts are labeled with acidic paper attached to wire strings listing the refuge, date, site number, place name, section, township, and range.

Figure 34. Historic artifacts in the vault room.

Associated Records—Oversized maps totaling 0.73 linear feet are stored in this room. Maps are rolled and stored in an acidic box on the floor. Maps are secured with rubber bands but are discolored and torn. It is unknown if all the maps classify as museum property as only a small percentage of maps were examined due to time constraints.

Historical objects—Twenty-one metal refuge signs (2.67 ft^3) are stored loose on the floor. Signs date back to the 1940s and vary in size and shape.

Hallway
The hallway (VC 5) houses associated records (reports and narratives) only. None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Collections are stored loose on a metal shelving unit. No windows are present, and no hazardous materials are stored here. Records have been sorted, cleaned, and labeled.

Museum Property Housing Summary
Associated Records—Less than one linear foot (0.92) of reports and 8 linear feet of narratives are stored in the hallway. Reports are stored loose on the shelf in acidic two-prong file folders and three-ring binders; others have been bound. Some reports, including both originals and copies, are discoloring and have loose pages. Narratives are stored loose on the shelf in acidic two-prong file folders. Narratives also have discoloring and loose pages.

36 CFR Part 79 Compliance

Building Condition and Structural Adequacy
The Mingo visitor's center, which was constructed in 1975, is easily accessible from major highways and has adequate parking for visitors and researchers. The building has no loading dock and is not located in a hurricane zone, flood plain, or near nuclear facilities; however, it is located in an earthquake zone. The building, which has one story below grade and one above grade, has a concrete foundation, wood siding exterior walls, and a shingled roof. The roof is original to the building and is in need of repairs. One external renovation has taken place on the building—metal bars were added to the basement windows in the late 1970s. The staff has observed cracks in both the foundation and the roof. Thirty-four aluminum framed windows are present throughout the building. All of the windows are watertight; however, some of the windows are not airtight. Building utilities include running water, telephone, electrical, and intranet services. Public restrooms also are present in the building.

Heating, Ventilating, and Air Conditioning Systems, and Environmental Controls
A central air conditioning and forced-air heat system furnishes the structure's heat and air-conditioning needs. No dust filters are present in the building. A contractor cleans the building twice a week. Carpets are professionally cleaned once a year. Neither temperature nor humidity are monitored or controlled within the building.

Space Allocation and Hazardous Chemical Use and Storage
The visitor's center encompasses an estimated 2,500 ft^2 and has the following components: records and photographic storage room, exhibit area, audiovisual room, gift shop, offices, gun safes, hazardous materials storage room, and a materials/supplies storage room. Chemicals (e.g., phenol) are used in the repository and are located in two storage rooms—the vault and a materials/supplies storage room, where they are locked in a special cabinet as required by the

Occupational Safety and Hazardous Administration (OSHA). No ventilation system or emergency eye wash/shower is located in the building.

Security System

Major entrances and office doors are secured with key locks and dead-bolt locks, while all windows are secured with window locks. Basement windows are also secured with metal bars. Motion lights are installed outside the building. No other security-detection system is installed. One unauthorized entry occurred in the late 1970s; however, nothing was taken from the building.

Fire-Detection and-Suppression Systems

The visitor's center possesses smoke detectors and manual fire alarms throughout the building. Fire extinguishers, which were last inspected in March 2006, also are present at key locations throughout the building**.** No fire-suppression system in present.

Pest Management

Regular monitoring and control of pests as defined in 36 CFR Part 79 is conducted at the visitor's center. A pest-management plan is in place that includes monitoring and control of pests; however, there is no written plan. Spraying by a professional pest-management company occurs once a month. Refuge staff members have noted a few spiders in the building, particularly during the winter months.

36 CFR Part 79 Compliance Summary

The visitor's center housing museum property at Mingo NWR does not meet compliance with 36 CFR Part 79 (i.e., environmental controls, security, fire safety, and pest management). A number of corrective actions are necessary in order for the buildings to comply with the minimum standards. For 36 CFR Part 79 building criteria and attributes, see Appendix 1.

411 DM Repository Evaluation Summary

A facility condition assessment using the 411 DM Facility Checklist was conducted on the visitor's center, and the center received a poor condition, with an overall score of 39% (Table 18). The condition score includes individual checklist scores for each space/room in which museum property is held at the refuge. For 36 CFR Part 79 building criteria and attributes, see Appendix 1.

Table 18.
411 DM Facility Checklist Summary at Mingo NWR

Building	Space/Room Type[1]	Number Rooms	Standards Met	Applicable Standards	Condition[2]	Percentage
Visitor's Center	Administrative Office (VC2–5)	4	6	14	Poor	43%
	Exhibit (VC1)	1	12	32	Poor	38%
	Storage	0	n/a	n/a	Poor	n/a
Overall Total		**5**				**39%**

1. Administrative Office includes offices, lobbies, meeting rooms, hallways, and any other non-dedicated space within a building used to house museum property. Exhibit room includes any space dedicated to display original documents, objects, or specimens (or copies thereof) for educational and cultural purposes. Storage rooms include space designated for the safekeeping of museum property not currently on exhibition.
2. A *poor* condition is assigned when 49% or less of the applicable standards on the 411 DM Checklist are met for all spaces (storage, exhibit, and administrative office spaces) holding a collection. A *fair* condition is assigned when 50–69 % of the applicable standards on the 411 DM Checklist are met. A *good* condition is assigned when 70% or greater of the applicable standards on the 411 DM Checklist are met. Ratings are generated by calculating the percentage by dividing the total applicable standards met for all spaces for a collection (i.e., location) by the total applicable standards for all spaces for a collection.

Both the exhibit and administrative office rooms received a rating of poor as they did not meet the following 411 DM general standards: written policies or procedures for the management and long-term care of museum property (e.g., control of access and handling of museum property procedures, and emergency, fire safety, and pest-management plans); recording and monitoring temperature, relative humidity, and light fluctuations; use of appropriate museum-quality containers; and use of the proper museum practices when displaying/exhibiting museum property.

In order for the facility to improve its rating to fair or good, FWS and Mingo NWR must first develop management standards that address the proper care and preservation for the museum property in their possession.

Rehabilitation Effort Summary and Recommendations

Archaeological collections and associated records housed at Mingo NWR require certain tasks be completed before they are considered to be compliant with federal and professional curation standards. Rehabilitation effort is based upon the completion of specific tasks that are associated with bringing the materials into compliance with 36 CFR Part 79. A designation of low is assigned in instances where one-to-two tasks are required; high is assigned in instances where more than two tasks are required. Compliance tasks and rehabilitation costs for archaeological collections are listed in Table 19. Rehabilitation costs and formulas can be found in Appendix 3.

Table 18.
Collections Rehabilitation Summary at Mingo NWR

Collection Type	Location	Extent (cubic or linear feet)	Rehabilitation Effort	Task	Complete	Incomplete	Estimated Rehabilitation Cost
Archaeological [a]	VC1	19.97	High	Sorting	X		n/a
				Bagging		X	$5,600
				Acid-free insert		X	$5,600
				Boxes		X	$1,900
				Labels		X	$1,900
Associated Documents	VC2	3.68	High	Arrangement	X		n/a
				Folders		X	$2,300
				Labels		X	$2,300
				Boxes/Fireproof Cabinets		X	$2,300
				Finding Aids		X	$2,700
				Security Copy		X	$11,600
Associated Documents	VC3	5.78	High	Arrangement	X		n/a
				Folders		X	$3,600
				Labels		X	$3,600
				Boxes/Fireproof Cabinets [b]	X	X	n/a
				Finding Aids		X	$4,200
				Security Copy		X	$18,100
Archaeological	VC4	16.39	High	Sorting	X		n/a
				Bagging		X	$4,600
				Acid-free insert		X	$4,600
				Boxes		X	$1,600
				Labels		X	$1,600
Associated Documents	VC4	0.73	High	Arrangement		X	$500
				Folders		X	$500
				Labels		X	$500
				Boxes/Fireproof Cabinets		X	$500
				Finding Aids		X	$600
				Security Copy		X	$2,300
Associated Documents	VC5	8.92	High	Arrangement	X		n/a
				Folders		X	$5,500
				Labels		X	$5,500
				Boxes/Fireproof Cabinets		X	$5,500
				Finding Aids		X	$6,500
				Security Copy		X	$28,000

Notes:
1. Rehabilitation effort is based upon the completion of specific tasks that are associated with bringing the **objects** into compliance with 36 CFR Part 79. Tasks are described as (1) Sorting by provenience and materials unless otherwise noted; (2) Bagging—all materials are placed in appropriate archival-quality, zip-lock bags; (3) Acid-free inserts are created and placed inside each new bag; (4) Boxes—all rebagged objects are placed into new archival boxes; and (5) Labels are applied to all new boxes.
2. Rehabilitation effort is based upon the completion of specific tasks that are associated with bringing the records into compliance with 36 CFR Part 79. Tasks are described as (1) Arrangement of records in a logical order; (2) Repackaging all records in archival-quality secondary containers; (3) Labels—all secondary containers are labeled in pencil or indelible ink; (4) Boxes—all records are placed into fireproof cabinets or new archival cardboard boxes with acid-free labels that are applied to new boxes; (5) Finding Aids—a formal description of the records collection is prepared; and (6) Preservation/Security Copies have been made and are stored off-site.
3. Rehabilitation costs are rounded up to the nearest hundred dollar amount.
[a] Artifacts, which are currently on display in exhibit cases, are on long-term loan from the University of Missouri-Columbia.
[b] Associated records are stored in both acidic and archival containers.

Archaeological collections (36.36 ft^3) at Mingo NWR have a high rehabilitation effort. In order for the collections to meet the standards of 36 CFR Part 79, the following tasks should be performed: (1) place artifacts in 4-mil zip-lock bags, (2) insert acid-free tags into the bags listing, at the very minimum, collector, date, and location (3) place artifacts into new archival containers (e.g., acid-free box or fire-proof cabinet), and (4) apply labels to the exterior of the new containers. If collections are rehoused in archival boxes, acid-free box labels should be placed in plastic sleeves so that the paper labels can be removed or changed without impacting the boxes.

Associated records, which total 19.11 ft^2, also have a high rehabilitation effort. In order for the collections to meet the standards of 36 CFR Part 79, the following tasks should be performed: (1) remove all foreign objects (e.g., paper clips, staples), (2) place records in appropriate archival containers (e.g., acid-free file boxes and folders),
(3) store records in a manner that will protect them from fire, theft, damage, and destruction, (4) create a folder-by-folder finding aid for all the records, and (5) create a preservation/security copy of the records and store it in a secure, off-site location.

Recommendations

1. Install security measures that include detection features (e.g., intrusion alarms).

2. Install a fire-suppression system.

3. Develop the following written policies and procedures: scope of collections statement, fire, emergency, and pest management plans.

4. Remove the bottle of Phenol from the vault room to the hazardous materials storage room.

5. Store the loan agreement for the archaeological materials in an easily accessible area.

6. Develop a finding aid for all associated records.

Comments/Issues

1. Education programs have been implemented at the refuge. Refuge personnel travel to various schools in the area to give zoological presentations. Large school groups also frequent the visitor's center on a monthly basis.

2. No scope of collections has been established at the refuge

3. Most of the refuge collection (archaeological and associated records) is curated at UMC from work conducted from the 1970s to the present. A curation agreement developed in the late 1980s is still in place. Human remains and other NAGPRA-related items are associated with the collections. A curation agreement with the University of Missouri was located during the assessment.

4. Prehistoric artifacts stored in the exhibit gallery are part of the refuge's larger collection, which is currently housed at UMC. According to standard museum practice, UMC maintains long-term loan documentation for these artifacts until they are returned for permanent curation following the conclusion of the loan.

5. No human remains or NAGPRA related materials are stored at the refuge.

6. An Ethnographic head-dress is stored on the refuge in the vault room. The head-dress was seized by U.S. Federal Marshals several years ago in a Missouri airport due to the fact that it contained eagle feathers, which are illegal to gather and display. This item was not counted as museum property as sized and forfeited items are not counted as such.

7. A large grinding stone is located in the entrance of the visitor's center. Although this item is an archaeological object, it was collected off private land in the southern part of the state and donated to the refuge. Since it was not collected off refuge land and has no significance to the refuge or the area, it was not counted as museum property.

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Ft. Niobrara National Wildlife Refuge
Valentine, Nebraska

Museum Property Management at Ft. Niobrara NWR

Museum property is stored at two facilities at Ft. Niobrara NWR—the visitor's center (Figure 35) and the old museum building (Figure 36). The Refuge was visited from May 23 to 25, 2006.

Figure 35. Exterior view of the Ft. Niobrara NWR visitor's center.

Figure 36. Exterior view of the Ft. Niobrara NWR old museum building.

Within the visitor's center, three rooms house museum property—an exhibit gallery (VC 1), the refuge manager's office (VC 2), and a personnel office (VC 3). In the old museum building, four rooms house museum property. On the main level, the records/general storage room (MB 1) and an old zoological specimen exhibit gallery (MB 2) house museum property, while on the basement level, an old paleontological/zoological specimen exhibit gallery (MB 3) and a miscellaneous storage room house museum property (MB 4). Tables 20 and 21 lists the museum property disciplines and totals examined during the assessment at these facilities. Detailed building and storage room conditions are described in the Museum Property Storage summary.

Table 20.
Museum Property Disciplines and Totals at
Ft. Niobrara NWR Visitor's Center

Storage Location				
VC 1	**VC 2**	**VC 3**	**Disciplines[1]**	**Extent**
X	X	X	Archaeology	30.82 ft^3
	X		Associated Documents (Records)[2]	0.13 linear feet
	X		History	One Historic Firearm
X			Paleontology	11.67 ft^3
X	X	X	Zoology	42 mounted or representative specimens

[1] Only those museum property disciplines in the headquarters building are listed in the table.
[2] Includes photographs and oversized materials.

Table 21.
Museum Property Disciplines and Totals at
Ft. Niobrara Old Museum Building

Storage Location					
MB 1	**MB 2**	**MB 3**	**MB 4**	**Disciplines[1]**	**Extent**
X			X	Archaeology	6.58 ft^3
X			X	Associated Documents (Records)[2]	43.80 linear feet
			X	Botany	1.07 ft^3
		X	X	Paleontology	66.51 ft^3
X	X	X	X	Zoology	193 mounted or representative specimens plus an additional 4.05 ft^3

[1] Only those museum property disciplines in the bunkhouse and garage are listed in the table.
[2] Includes photographs and oversized materials.

Museum Property Storage Summary

Visitor's Center

Exhibit Gallery

The exhibit gallery (VC 1) currently holds archaeological, paleontological, and zoological materials, and is approximately fifty-to-sixty percent full (Figure 37). The room also contains an audiovisual viewing section and hands-on station. A gift shop is located adjacent to the room. None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Materials are stored throughout the room in a variety of ways: (1) loose on hands-on exhibits, (2) freestanding on floor mounts/displays, (3) in enclosed plastic exhibit cases, or (4) in a locked glass cabinet case. Seven windows are present in the

gallery, but they are not covered with any miniblinds or shades. No hazardous materials are stored in the room. All of the materials have been cleaned, with approximately fifty percent labeled or identified.

Figure 37. View of the Ft. Niobrara visitor's center exhibit galley.

Museum Property Housing Summary

Archaeological—17.13 ft^3 of historic archaeological materials, are stored in the exhibit gallery in six enclosed plastic exhibit cases of varying sizes (Figure 38). Artifacts are stored loose within the exhibit cases or have been mounted to heavy-duty wallboard with plastic string; however, it is unknown if the materials are archival. Larger items (a letter press, rifle, dinner bell, and a saber) are identified in the display case with the artifact name on a piece of paper that is located in the interior of the case. None of the materials have been directly labeled with either an accession or a catalog number.

Figure 38. Historic archaeological display in the exhibit gallery.

Figure 39. Paleontological display in the exhibit gallery.

Paleontological—Paleontological specimens (11.67 ft^3) are stored in an enclosed glass display case, which has sliding doors that are locked at all times. Specimens are stored loose on the shelves within the case (Figure 39). None of the materials have been directly labeled; however, some of the larger specimens are identified with a piece of paper listing the species type in the display case.

Zoological—31 zoological specimens are located throughout the exhibit gallery. Specimens are displayed loose in the room for hands-on exhibits or freestanding on floor mounts/displays. Half of the specimens are mounted and labeled/identified with the species name.

Refuge Manager's Office

The refuge manager's office (VC 2), which is approximately eighty percent full, currently holds archaeological collections, associated records, historical objects, and zoological specimens. None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Materials are stored on three metal shelving units. Two windows are present in the room, and they are protected with miniblinds. No hazardous materials are stored there; however, unexploded ordnances are stored on the shelves in the room. None of the materials have been properly inventoried or labeled.

Museum Property Housing Summary

Archaeological—6.49 ft^3 of historic artifacts are stored in this room. The artifacts are surface finds that have been recovered from the refuge throughout the years. Artifacts—metal, ceramic, and glass objects (Figure 40)—are stored loose on top of the shelves. None of the artifacts have been properly cleaned, inventoried, or labeled. A large portion of the metal artifacts are intact ordnance rounds, half of which have not been exploded. This is a subject that should be addressed thoroughly by FWS.

Figure 40. Archaeological materials stored on shelf tops in the refuge manager's office at the Ft. Niobrara visitor's center.

Associated Records—One spiral-bound report, totaling 0.13 linear feet, is stored in this room. The report, which is from archaeological work conducted on the refuge in the 1970s, is stored loose on the shelf.

Historical Objects—One historic firearm—a Colt 45 from the late 1800s is located in a gun vault in the refuge manager's office.

Zoological—A total of five zoological specimens are located this office. Specimens are stored loose throughout the room on the shelves or desk, or are hanging from the wall.

Personnel Office

This office (VC 3) also holds archaeological collections and zoological specimens and is approximately sixty-to-seventy percent full. None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Materials are stored on three wood shelving units. Two windows are present in the room, and they are protected with miniblinds. No hazardous materials are stored within the room; however, unexploded ordnance is stored on the shelves in the room. None of the artifacts have been properly inventoried and few have been labeled.

Museum Property Housing Summary

Archaeological—7.20 ft^3 of historic artifacts are stored in this room. Artifacts—metal, ceramic, and glass objects—are stored loose on the shelves. Only twenty-five percent of the artifacts have been cleaned and labeled with acidic paper attached to wire strings listing the refuge, date, site number, place name, section, township, and range.

Zoological—Six zoological specimens are located in this room. Specimens are stored loose throughout the room on the wooden shelves.

Old Museum Building

Records/General Storage Room

The general storage room (MB 1), which is located at the entrance of the building, houses archaeological materials, associated records, and zoological specimens (Figure 41). The room, which is at capacity, also houses excess materials and supplies (e.g., books, pamphlets, and computer equipment) from the visitor's center (Figure 42). A fire extinguisher is located at the rear of the room; however, an inspection date was not located. A fire hydrant is also located 30 feet from the building, as the refuge has its own fire personnel and equipment. None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Materials are stored (1) in seven metal fireproof file cabinets and one standard file cabinet, (2) in acidic boxes on top of the file cabinets, or (3) on the floor between the filing cabinets. Only one window is present in the room, and it is secured with a window lock. A crack was observed in the lower half of the window. It is unknown if any hazardous materials are stored in the room. All of the materials have been sorted and cleaned. Approximately seventy-five percent of the records have been labeled, while all of the artifacts have been labeled.

EDITOR'S NOTE: During the assessment, power in the building was out due to storms in the area. The assessment was done by artificial light and use of a flashlight. Some building details may have been overlooked because of this.

Figure 41. View of storage room and file cabinets used for records storage in the old museum building.

Figure 42. Excess supplies and equipment in the general storage room of the old museum building.

Museum Property Housing Summary

Archaeological—One-half box (1.08 ft^3) of archaeological materials was located in the room during the assessment. Artifacts, both prehistoric and historic, were collected during a mid-1970s survey. The artifacts are housed in an acidic box (Figure 43) that is stored on top of a fireproof file cabinet. Secondary containers consist of acidic brown paper bags, which are directly labeled in marker with the site number, project, provenience, investigator, and date. Most of the artifacts have been cleaned and are labeled directly in ink with the site and catalog number.

Figure 43. Box of archaeological artifacts from Ft. Niobrara NWR located in the general storage room.

Associated Records—43.22 linear feet of records from Ft. Niobrara NWR are stored in this room. An unknown amount of records from Valentine NWR also are stored here. Record types include aerial, color, and black-and-white photographs; slides; negatives; ledgers; maps; blueprints; reports; and administrative files. Records are stored (1) in seven fireproof file cabinets and one standard file cabinet, (2) in acidic boxes stacked on the floor or on top of the file cabinets, and (3) on the floor. Secondary containers consist of acidic manila, expandable, and hanging folders, binders, envelopes, plastic slide and negative sleeves, map and smaller acidic boxes, and loose within the drawers and boxes (Figure 44). All of the records have been sorted, and approximately seventy-five percent have been labeled. A drawer-by-drawer finding-aid also has been created. One-half of the maps have been placed in map boxes (Figure 45) that are labeled with a number that corresponds to the map name on the finding aid. A large quantity of staples, tape, rubber bands, binders, and paper clips were noted.

Figure 44. View of records and maps stored in fireproof file cabinets in the general storage room.

Figure 45. Maps rolled in and placed in map boxes in fireproof file cabinets in the general storage room.

Zoological—A total of eight specimens are located in this room. Specimens, which are leftover from exhibits that were once on display in the building, are stored loose on top of various cabinets throughout the room.

Old Zoological Specimen Exhibit Gallery

The old zoological specimen exhibit gallery (MB 2), which is located behind the records/general storage room, currently holds zoological specimens that were once on exhibit when the building was still in use as a museum. The room, which is at capacity, also houses excess building and office materials (e.g., door frames, shelving units, etc.). None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Specimens are stored in old wood and glass enclosed display cases (Figure 46). No windows are present in the room. A set of stairs that lead to the basement are located along the west wall.

Figure 46. Old zoological display case in the old museum building.

Zoological—One hundred twenty six (126) zoological specimens are housed loose in the cases. Some specimens are missing from the displays, and it is unknown where those materials are currently located. All specimens are mounted and identified within the cases.

Old Paleontological/Zoological Specimen Exhibit Gallery

Located in the basement, this room (MB 3) holds paleontological and zoological specimens only. The room encompasses 200 ft^2 and is fifty percent full. None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Specimens are stored in three, two-tiered (level) wood and glass enclosed exhibit cases. No windows are present in the room, and no hazardous chemicals are stored there; however, an asbestos-covered heating unit is located adjacent to the room.

Paleontological—Thirty (30) specimens totaling 48.95 ft^3 are stored loose on the bottom of two exhibit cases (Figure 47). It is unknown if any of the items are directly labeled.

Zoological—A total of 33 zoological specimens are located in the exhibit gallery. Specimens are stored loose in the top level of all three exhibit cases. Specimens are mounted, but it is unknown if any of them are labeled.

Figure 47. Old paleontological display cases in the old museum building.

Miscellaneous Storage Room

The miscellaneous storage room (MB 4) is located in the basement and houses archaeological materials, associated records, and botanical, paleontological, and zoological specimens (Figure 48). An unknown amount of records from Valentine NWR, and potentially some archaeological materials, are also located in this room. The room, which is at capacity, also houses excess supplies (e.g., envelopes, ink cartridges, etc.). The materials are not stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Materials are stored in old wood and glass display cases and in acidic boxes on top of the exhibit cases or on the floor. Two windows are present in the room; however they are not covered with blinds or shades. Cracks were observed in the windows. Insect activity was noted in the room. Some hazardous materials (i.e., bug repellants, paint thinner) are stored on a shelf separated from museum property. An asbestos covered heating unit is also located adjacent to the room. Half of the materials have been sorted and cleaned; however, very few have been labeled.

Figure 48. View of the old museum building's miscellaneous storage room.

Archaeological—5.50 ft^3 of historic artifacts are stored in this room. Artifacts—metal, ceramic, and glass objects—are stored loose in the exhibit cases. Half of the artifacts have been cleaned; however, none are labeled. Objects were located next to records from Valentine NWR, so it is possible not all the objects assessed were gathered from Ft. Niobrara NWR. FWS should determine which refuge these materials are associated with in order to accurately account for their museum property holdings.

Associated Records—0.58 linear feet of records are located next to archaeological materials in the exhibit cases. Record types include background files, black-and-white photographs, and negatives. Records are not sorted and are stored in acidic envelopes, wooden boxes, or loose within the cases. A few of the photographs are directly labeled in ink; however, the information has faded. Many of the records are discolored and torn. Insect activity was observed on the records.

Botanical—1.07 ft^3 of herbarium samples are located in the miscellaneous storage room. Samples are stored loose in an acidic box on the floor. Samples are glued directly to acidic mat-board paper and are labeled directly in ink with the scientific name and year.

Paleontological—28 specimens totaling 17.56 ft^3 are located in this room. Specimens are stored loose in the exhibit cases and in acidic boxes. None of the materials are directly labeled. Mouse droppings were located in the bottom of the exhibit case holding these specimens.

Zoological—26 specimens plus 6 boxes (4.05 ft^3) are located in this room. Specimens are stored loose in the exhibit cases or in boxes located on the floor. None of the specimens have been labeled.

36 CFR Part 79 Compliance

Building Condition and Structural Adequacy

The Ft. Niobrara NWR visitor's center was constructed in 1972 and is not easily accessible from major highways because of its location in a rural, sparsely populated area. The building has adequate parking for visitors and researchers, and no loading dock is present in the building. It is not located in a hurricane or earthquake zone or near nuclear facilities; however, it is located in a floodplain. The building foundation is concrete with brick and shingled exterior walls and a shingled roof. One external renovation has taken place on the building—an addition in 2002/2003. The staff has not observed any cracks or leaks in either the foundation or the roof. Twenty-five aluminum-framed windows are present throughout the building, all of which are watertight and airtight. Building utilities include running water, telephone, electrical, and intranet services. Public restrooms also are present in the building.

This old museum building was originally constructed as a residence in the mid-1930s as a CCC (Civilian Conservation Corps) project. The building was then used as a museum from the 1950s until the 1970s. The building, which is located fifty yards from the visitor's center, is not easily accessible from major highways because of its location in a rural, sparsely populated area. The building has limited parking for visitors and residents, no loading dock, and is not located in

a hurricane or earthquake zone or near nuclear facilities; however, it is located in a floodplain. The building foundation is concrete with brick exterior walls and a built-up asphalt roof. Cracks have been observed in both the foundation and the roof, which is missing numerous shingles due to storms. No visible water damage was observed in the building. Twenty-one wood-framed windows are present throughout the building; none are completely watertight and airtight. Building utilities include electrical services.

Heating, Ventilating, and Air Conditioning Systems, and Environmental Controls

A central air conditioning and forced-air heat system furnishes the visitor's center heating and cooling needs. No dust filters are present in the building. A contractor cleans the building twice a week. Neither temperature nor humidity are monitored or controlled within the building.

A boiler heating system is present in the old museum building; a large amount of asbestos is present on the heater in the basement. A protective face mask was worn while assessing the materials in the basement. It is unknown if any air-conditioning system is present. No dust filters are present, and neither temperature nor humidity are monitored or controlled within the building. The building is not cleaned or maintained on a regular basis.

Space Allocation and Hazardous Chemical Use and Storage

The visitor's center has the following components: exhibit area, audiovisual station, gift shop, offices, gun safes, copy room, and a materials/supplies storage room. A small amount of chemicals (e.g., bug sprays, insecticides) are stored in the materials/supplies storage room.

The old museum building has the following components: exhibit area, artifact holding area, photographic and records storage room, and a materials/supplies storage room. It is unknown if any hazardous chemicals are stored long term in the building.

Security System

All major entrances and office doors at the visitor's center are secured with key and dead-bolt locks, while all windows are secured with window locks. No security-detection system is installed. Only one unauthorized entry has occurred at the building—a break-in where cash was stolen.

The old museum building is secured with a pad lock at the main entrance. All windows are secured with window locks. No security-detection system is installed, and there have been no episodes of unauthorized entry.

Fire-Detection and -Suppression Systems

The visitor's center has smoke detectors and fire extinguishers located throughout the building. Fire extinguishers are also located throughout the building and were last inspected in March 2006. Fire trucks and fire rangers are located at the refuge. No other fire-detection or -suppression devices are in place.

Only one fire extinguisher was observed in the old museum building, which was last inspected in March 2006. Fire trucks and fire rangers are located at the refuge, as well a fire-hydrant that is located ten feet from the building's entrance. No other fire-detection or -suppression devices are in place.

Pest Management

Regular monitoring and control of pests as defined in 36 CFR Part 79 is not preformed at either building housing museum property. At the visitor's center, refuge personnel monitor the building as-needed and spraying is preformed once a year. Refuge personnel have observed live insects on the floor in the building at various times; however, no widespread infestations have been noted.

At the old museum building, spraying is preformed once a year. A few insects were observed throughout the building during the assessment. Zoological specimens are prone to infestations if a long-term-pest management plan is not developed.

36 CFR Part 79 Compliance Summary

Neither the visitor's center or old museum building housing museum property at Ft. Niobrara NWR meet the compliance criteria with 36 CFR Part 79 (i.e., environmental controls, security, fire safety, and pest management). A number of corrective actions are necessary in order for the buildings to comply with the minimum standards. For 36 CFR Part 79 building criteria and attributes, see Appendix 1.

411 DM Repository Evaluation Summary

A facility condition assessment using the 411 DM Facility Checklist was conducted on the two buildings that hold museum property at Ft. Niobrara NWR. The visitor's center received a poor condition, with an overall score of 29%, as did the old museum building, which received an overall score of 13% (Table 22). The condition scores include individual checklist scores for each space/room in which museum property is held at the refuge. For individual facility/room checklists, criteria, and definitions, please see Appendix 1.

Table 22.
411 DM Facility Checklist Summary at Ft. Niobrara NWR

Building	Space/Room Type[1]	Number Rooms	Standards Met	Applicable Standards	Condition[2]	Percentage
Visitor's Center	Administrative Office (VC 2–3)	2	4	15	Poor	27%
	Exhibit (VC 1)	1	11	33	Poor	33%
	Storage	0	n/a	n/a	n/a	n/a
Overall Total		**3**				**31%**
Old Museum Building	Administrative Office (MB 1–4)	4	2	15	Poor	13%
Overall Total		**4**				**13%**

1. Administrative Office includes offices, lobbies, meeting rooms, hallways, and any other non-dedicated space within a building used to house museum property. Exhibit rooms include any space dedicated to display original documents, objects, or specimens (or copies thereof) for educational and cultural purposes. Storage rooms include space designated for the safekeeping of museum property not currently on exhibition.
2. A *poor* condition is assigned when 49 percent or less of the applicable standards on the 411 DM Checklist are met for all spaces (storage, exhibit, and administrative office spaces) holding a collection. A *fair* condition is assigned when 50 to 69 percent of the applicable standards on the 411 DM Checklist are met. A *good* condition is assigned when 70 percent or greater

of the applicable standards on the 411 DM Checklist are met. Ratings are generated by calculating the percentage by dividing the total applicable standards met for all spaces for a collection (i.e., location) by the total applicable standards for all spaces for a collection.

All seven rooms in both buildings received a rating of poor as they did not meet the following 411 DM general standards: written policies or procedures dealing with the management and long-term care of museum property (i.e., control of access and handling of museum property procedures, and emergency, fire safety, and pest management plans); maintenance of recording and monitoring devices for temperature, relative humidity, and light fluctuations; use of appropriate museum-quality containers; and the proper display/exhibit of museum property.

In order for the facility to improve its rating to fair or good, FWS and Ft. Niobrara NWR must first develop management standards that address the proper care and preservation for the museum property in their possession.

Rehabilitation Effort Summary and Recommendations

Archaeological collections and associated records housed at Ft. Niobrara NWR require certain tasks be completed before they are considered to be compliant with federal and professional curation standards. Rehabilitation effort is based upon the completion of specific tasks that are associated with bringing the materials into compliance with 36 CFR Part 79. A designation of low is assigned in instances where one-to-two tasks are required; high is assigned in instances where more than two tasks are required. Compliance tasks and rehabilitation costs for archaeological collections are listed in Table 23. Rehabilitation costs and formulas can be found in Appendix 1.

Table 23.
Collections Rehabilitation Summary at Ft. Niobrara NWR

Collection Type	Location	Extent (cubic or linear feet)	Rehabilitation Effort	Task	Complete	Incomplete	Estimated Rehabilitation Cost
Archaeological	VC 1	17.13	High	Sorting	X		n/a
				Bagging		X	$4,800
				Acid-free insert		X	$4,800
				Boxes		X	$1,600
				Labels		X	$1,600
Archaeological	VC 2	6.49	High	Sorting	X		n/a
				Bagging		X	$1,800
				Acid-free insert		X	$1,800
				Boxes		X	$600
				Labels		X	$600

Collection Type	Location	Extent (cubic or linear feet)	Rehabilitation Effort	Task	Complete	Incomplete	Estimated Rehabilitation Cost
Associated Documents	VC 2	0.13	High	Arrangement	X		n/a
				Folders		X	$80
				Labels		X	$80
				Boxes/Fireproof Cabinets		X	$80
				Finding Aids		X	$100
				Security Copy	X		n/a
Archaeological	VC 3	7.20	High	Sorting	X		n/a
				Bagging		X	$2,000
				Acid-free insert		X	$2,000
				Boxes		X	$700
				Labels		X	$700
Archaeological	MB 1	1.08	High	Sorting	X		n/a
				Bagging		X	$300
				Acid-free insert		X	$300
				Boxes		X	$100
				Labels		X	$100
Associated Documents	MB 1	43.22	High	Arrangement	X		n/a
				Folders		X	$26,600
				Labels		X	$26,600
				Boxes/Fireproof Cabinets	X		n/a
				Finding Aids	X		n/a
				Security Copy		X	$135,500
Archaeological	MB 4	5.50	High	Sorting		X	$1,100
				Bagging		X	$1,600
				Acid-free insert		X	$1,600
				Boxes		X	$600
				Labels		X	$600
Associated Documents	MB 4	0.58	High	Arrangement		X	$400
				Folders		X	$400
				Labels		X	$400
				Boxes/Fireproof Cabinets		X	$400
				Finding Aids		X	$500
				Security Copy		X	$1,900

Notes:
1. Rehabilitation effort is based upon the completion of specific tasks that are associated with bringing the objects into compliance with 36 CFR Part 79. Tasks are described as (1) Sorting by provenience and materials unless otherwise noted; (2) Bagging—all materials are placed in appropriate archival-quality, zip-lock bags; (3) Acid-free inserts are created and placed inside each new bag; (4) Boxes—all rebagged objects are placed into new archival boxes; and (5) Labels are applied to all new boxes.
2. Rehabilitation effort is based upon the completion of specific tasks that are associated with bringing the records into compliance with 36 CFR Part 79. Tasks are described as (1) Arrangement of records in a logical order; (2) Repackaging all records in

archival-quality secondary containers; (3) Labels—all secondary containers are labeled in pencil or indelible ink; (4) Boxes—all records are placed into fireproof cabinets or new archival cardboard boxes with acid-free labels that are applied to new boxes; (5) Finding Aids—a formal description of the records collection is prepared; and (6) Preservation/Security Copies have been made and are stored off-site.
3. Rehabilitation costs are rounded up to the nearest hundred dollar amount.

Archaeological collections (37.40 ft^3) at Ft. Niobrara NWR require a high rehabilitation effort. In order for the collections to meet the standards of 36 CFR Part 79, the following tasks should be performed: (1) place artifacts in 4-mil zip-lock bags, (2) insert acid-free tags into the bags listing, at the very minimum, collector, date, and location (3) place artifacts into new archival containers (e.g., acid-free box or fire-proof cabinet), and (4) apply labels to the exterior of the new containers. If collections are rehoused in archival boxes, acid-free box labels should be placed in plastic sleeves so that the paper labels can be removed or changed without impacting the boxes.

Associated records, which total 43.93 ft^2, also required a high rehabilitation effort. In order for the collections to meet the standards of 36 CFR Part 79, the following tasks should be performed: (1) remove all foreign objects (e.g., paper clips, staples), (2) place records in appropriate archival containers (e.g., acid-free file boxes and folders),
(3) store records not housed in fire-proof file cabinets in the records/storage room and records in the miscellaneous storage room in a manner that will protect them from fire, theft, damage, and destruction, (4) create a folder-by-folder finding aid for all the records in the miscellaneous storage room, and (5) create a preservation/security copy of all the records and store them in a secure, off-site location.

Recommendations

1. Move all objects and records to the visitor's center since the building meets more of the 36 CFR Part 79 requirements.

2. Install security measures that include detection features (e.g., intrusion alarms) in both the visitor's center and old museum building.

3. Install a fire-suppression system in the visitor's center.

4. Develop the following written policies and procedures: scope of collections statement and fire, emergency, and pest management plans.

5. One box of archaeological artifacts from a 1970s refuge survey was located in the old museum building. Artifacts should be rehabilitated and moved to the appropriate curation facility.

6. Clean-up excess clutter in the old museum building as it poses a fire and pest hazard. Properly dispose of the old zoological exhibits as they also pose a pest hazard.

7. Remove all unexploded ordnance from personnel offices in the visitor's center.

Comments/Issues

1. No scope of collections has been established at the refuge

2. No human remains or NAGPRA-related materials are stored at the refuge.

3. Unexploded ordnance is currently stored in personnel offices in the visitor's center. It was requested by the refuge manager that an inquiry by FWS be made to explode all this ordnance.

4. Ft. Niobrara NWR was originally the Fort Niobrara Military Reservation. It was established in 1879 to keep peace between the frontier settlers and the Native Americans, and to control horse and cattle thieves. In 1906, the military closed the fort and made it a cavalry remount station, but by 1911, all military operations at the fort were abandoned. All that remains from the military fort is one building—the red barn; however old foundations and earth works are visible on the refuge, as well as many historic artifacts. The military history makes Ft. Niobrara NWR unique in regard to other National Wildlife Refuges as an abundance of historical artifacts are constantly found on the refuge by refuge personnel and visitors.

5. During the assessment, power in the old museum building was out due to storms in the area. The assessment was done by artificial light and use of a flashlight. Some building details may have been overlooked because of this.

6. Artifacts are constantly found on the refuge by visitors and refuge personnel due to the historical significance of the refuge. These materials are usually turned in to refuge management at the visitor's center. Artifacts are then placed in personnel offices or in the old museum building.

7. An asbestos-covered heating system is located in the basement of the old museum building. At the request of refuge personnel, a protective mask was worn during the assessment of museum property currently stored in the basement. This heating system needs to be disposed of properly.

7

Arrowwood National Wildlife Refuge
Pingree, North Dakota

Museum Property Management at Arrowwood NWR

Museum property is stored at three facilities at Arrowwood NWR—the headquarters' building (Figure 49), the bunkhouse (Figure 50), and the garage. The Refuge was visited from June 6 to 7, 2006.

Figure 49. Exterior view of the Arrowwood NWR headquarters' building.

Figure 50. Exterior view of the Arrowwood NWR bunkhouse.

Within the headquarters' building, three rooms house museum property—the refuge manager's office (HQ1), the personnel office (HQ2), and a materials supplies/mechanical storage room (HQ3). In the bunkhouse, one room—the loft/attic—houses museum property, while in the garage, only the main corridor houses museum property. Tables 24 and 25 lists the museum property disciplines and totals examined during the assessment at these facilities. Detailed building and storage room conditions are described in the Museum Property Storage summary.

Table 24.
Museum Property Disciplines and Totals at
Arrowwood NWR Headquarters' Building

Storage Location				
HQ1	**HQ2**	**HQ3**	**Disciplines[1]**	**Extent**
X	X		Associated Documents (Records)[2]	8.43 linear feet
		X	History	1.04 ft^3

[1] Only those museum property disciplines in the headquarters building are listed in the table.
[2] Includes photographs and oversized materials.

Table 25.
Museum Property Disciplines and Totals at
Arrowwood NWR Bunkhouse and Garage

Storage Location			
Bunkhouse	**Garage**	**Disciplines[1]**	**Extent**
X	X	Associated Documents (Records)[2]	2.95 linear feet

[1] Only those museum property disciplines in the bunkhouse and garage are listed in the table.
[2] Includes photographs and oversized materials.

Museum Property Storage Summary

Headquarters' Building

Refuge Manager's Office

The refuge manager's office (HQ 1) currently holds associated records only and is approximately sixty percent full. None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Collections are stored in a Sentry® two-drawer fireproof file cabinet (Figure 51) and a plastic crate that is stored on the floor, both of which are not labeled. Two windows are present in the room, and they are protected with miniblinds. A fire extinguisher is located directly outside of the office. No hazardous materials are stored in the room. All of the materials have been cleaned and stored, and approximately fifty percent of the record materials have been labeled or identified.

Figure 51. A fireproof file cabinet used for associated records in the refuge manager's office at Arrowwood NWR.

Museum Property Housing Summary

Associated Records—Reports, color/black-and-white photographs, maps, blueprints, oversized aerial photographs, and administrative files totaling 2.26 linear feet are stored in this room. Secondary containers consist of acidic file and manila folders, binders, photographic frames, and photographs adhered to poster board within the drawers. Maps and aerial photographs are stored loose in the plastic crate. Paper records have been sorted by subject or year, and approximately half have been labeled. Photographs, which are sorted by year, are labeled directly with in either ink or pencil with the date, project, or event or have adhesive labels attached labeled with the same information. No finding aid has been created for any of the records. A small amount of staples, paper clips, and adhesive materials were observed on the records.

Personnel Office

This office (HQ 2) currently holds associated records only and is approximately sixty-five percent full. None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Records are stored on one metal shelving unit. No windows are present in the room, and no hazardous materials are stored there. All of the materials have been cleaned, stored, and labeled.

Museum Property Housing Summary

Associated Records—6.17 linear feet of records are stored in the library. Records, which are stored on one metal shelving unit, include narrative reports, with original color/black-and-white photographs. Secondary containers consist of acidic two-prong folders and binders that are stored loose on the shelves. Photographs are glued, stapled, or taped within the narratives. All of the records have been sorted by year and labeled with the refuge and year.

Supply/Mechanical Storage Room

This room (HQ 3) is located at the rear of the building and currently houses one historical object. The room, which is approximately seventy-five percent full, also houses excess supplies (e.g., pens, paper, envelopes, clothes, insecticides, etc.), which are stored in lockers, and various office equipment items (e.g., file cabinets, etc.). The historical object is not stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Numerous windows are present in the room; however they are not covered with blinds or shades but with solar panels. If the environmental system detects the building is getting to hot, the panels will close. Some hazardous materials (i.e., bug sprays, insecticides) are stored in the room, but they are not located near the object.

Museum Property Housing Summary

Historical Objects—One historic survey transit (1.04 ft^3) from the early 1900s is located in this room. The transit, which is stored in a wooden box on top of a metal file cabinet (Figure 52), is not directly labeled; however, the box has an adhesive label that states the following: "Repaired by W.F. Sprenginether–14 N. 9th St., St. Louis, 1936 (May 12)."

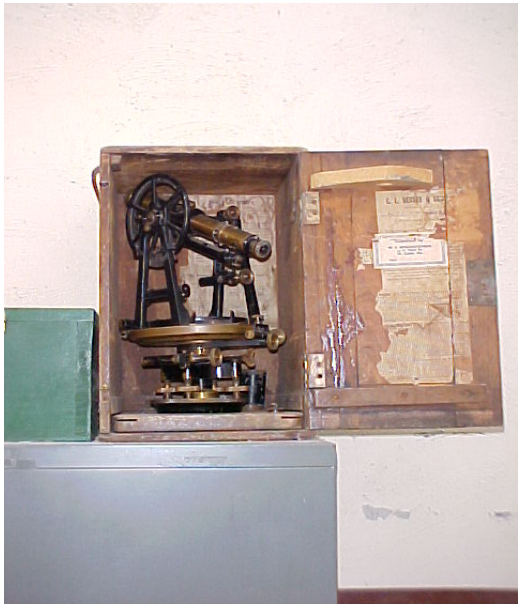

Figure 52. Old survey transit stored at Arrowwood NWR.

Bunkhouse

Loft/Attic

This loft/attic, which is located above the bunkhouse living quarters, currently holds associated records. The room, which is approximately ninety percent full, also houses excess materials and supplies (e.g., books, light bulbs, air filters, auto parts). Access to the room is by a ladder that is located in the garage portion of the building. A fire extinguisher is located at the entrance to the room (Figure 53). None of the collections are stored under pipes; however, the room has no ceiling—it is open to the roof and subject to external conditions should damage occur to the roof.

The floor load is sufficient to support the weight of the materials currently held. Records are stored in stackable metal shelving units with glass doors or in acidic boxes on the floor. No windows are present in the room; however, windows and garage doors are located in the space adjacent to and below the room. Windows are secured with window locks and metal bars; however, the garage doors are unlocked at all times. When garage doors are opened, birds frequently access the area.

Figure 53. Entrance to the loft/attic in the Arrowwood NWR bunkhouse.

Museum Property Housing Summary

Associated Records—Less than one linear foot (0.65) of reports from Arrowwood NWR are stored in this room. Copies of records from Chase Lake NWR, totaling 0.38 linear feet, also are stored here. Record types include reports and administrative and analysis files. Secondary containers consist of acidic file and manila folders, binders, and magazine file boxes on both the shelves or within the boxes. All of the records have been sorted; and approximately eighty percent have been labeled.

Garage

Main Corridor

In the garage building (Figure 54), the main corridor currently holds associated records, including maps, blueprints, and aerial photographs. The room, which is approximately twenty-five percent full, also houses excess materials/supplies (e.g., lawn mowers, tires, explosives). None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. No windows are present in the room; however, six manual garage doors are occasionally opened allowing birds, insects, and rodents access to the area. An infestation of mice in the map file cabinets was evident. One fire extinguisher is located in the garage.

Figure 54. Garage building used for housing maps at Arrowwood NWR.

Museum Property Housing Summary

Associated Records—1.92 linear feet of oversized records—maps, aerial photographs, and blueprints, are stored in the garage. Records are stored in map file cabinets, which are severely damaged—drawers are warped and rusted and have environmental (i.e., water and mold) and pest damage (Figure 55). All records are stored loose within the drawers. Some maps and blueprints are flattened within the drawers, while others are rolled, but none are properly preserved. Approximately half of the records have been damaged by mice infestations (Figure 56). Only forty-to-fifty percent of the records have been sorted or labeled.

Figure 55. Map cabinets used to house maps in the Arrowwood NWR garage.

Figure 56. Close-up view of maps and aerial photographs in the Arrowwood NWR garage. Note the mice damage.

36 CFR Part 79 Compliance

Building Condition and Structural Adequacy

Headquarters' Building

The Arrowwood NWR headquarters' building was constructed in 1982 and is not easily accessible from major highways because it is located in a rural, unpopulated area (located on a gravel road two miles from the highway). The building has limited parking for visitors and researchers, no loading dock, and is not located in a hurricane or earthquake zone, a floodplain, or near nuclear facilities. The building foundation is concrete with stucco exterior walls and a solar-paneled metal roof. One external renovation has taken place on the building—an addition in 1994. The staff has not observed any cracks or leaks in either the foundation or the roof. Twelve steel-and-aluminum-framed windows are present on the front of the building, and 10 solar-panel windows are located on the roof. All of the windows are watertight and airtight. Building utilities include running water, telephone, electrical, and intranet services. Public restrooms also are present in the building.

Bunkhouse

This building was originally constructed as a garage and storage/tool facility in the 1930s as a CCC (Civilian Conservation Corps) project. One portion of the building was converted to a bunkhouse residence ten-to-twenty years ago. The building is located one-hundred yards from the headquarters building. It is not easily accessible from major highways because the refuge is located in a rural, unpopulated area. The building has adequate parking for visitors and residents, no loading dock, and is not located in a hurricane or earthquake zone, a floodplain, or near nuclear facilities. The building foundation is concrete with concrete block exterior walls and a built-up asphalt roof. Cracks have been observed in the foundation but not on the roof. Twelve wood-framed windows are present throughout the building and are covered with metal bars; however, only the windows in the resident quarters are watertight and airtight. Building utilities include running water, telephone, and electrical services.

Garage

The garage was constructed in the 1974 and is located fifty yards from the refuge bunkhouse. It is not easily accessible from major highways because the refuge is located in a rural, unpopulated area. The building has no parking for visitors. No loading dock is present at the building, and it is not located in a hurricane or earthquake zone, a floodplain, or near nuclear facilities. The building foundation is concrete with corrugated metal siding exterior walls and a metal roof. The staff has not observed any cracks or leaks in either the foundation or the roof. No windows are present in the garage. Building utilities include electrical services.

Heating, Ventilating, and Air Conditioning Systems, and Environmental Controls

A solar Metasystem® unit furnishes the headquarters' building's heating and cooling needs. Dust filters are present and changed as needed, and the building is cleaned every Friday by a refuge personnel's spouse. Temperature is monitored and controlled through the Metasystem®.

Humidity is monitored but not controlled within the building; however, humidity is not a problem in North Dakota.

A central air conditioning and forced-air heat system furnishes the resident quarters' heating and cooling needs; however, the garage and storage portions of the building are not equipped with environmental controls. No dust filters are present, and neither temperature nor humidity are monitored or controlled within the building. The resident quarters' portion is cleaned and maintained as needed by the residents.

No heating or air conditioning system is present in the garage. No dust filters are present, and neither temperature nor humidity are monitored or controlled within the building. The building is not cleaned or maintained on a regular basis.

Space Allocation and Hazardous Chemical Use and Storage

The headquarters' building encompasses 1,800 ft^2 and has the following components: meeting room, offices, information area, kitchen/break room, gun safe, and materials/supplies storage room. A small amount of chemicals (e.g., bug sprays, insecticides) are stored in the materials/supplies storage room.

The bunkhouse has three components/functions—living quarters, garage, and tool/supplies storage area. A records storage and materials/supplies storage area is located in the attic/loft above the living quarters' portion of the building. No hazardous chemicals are stored long term in the bunkhouse.

The garage has the following components: records storage area and materials/supplies storage area. It is unknown if any chemicals are stored long term in the garage as none were observed during the assessment.

Security System

Major entrances and office doors are secured with key and dead-bolt locks, while all windows are secured with window locks at the headquarters' building. No security-detection system is installed. There have been no episodes of unauthorized entry.

The bunkhouse is secured with key locks through the main entrances. Manual garage doors secure the garage contents; however, they do not lock. Key and pad-locks secure the storage/tool area of the building. All windows are secured with window locks. No security-detection system is installed, and there have been no episodes of unauthorized entry.

One exterior door is present in the garage, and it is secured with a key lock. Six manual garage doors secure the garage contents, but they do not lock. No windows are present in the garage. No security-detection system is installed, and there have been no episodes of unauthorized entry.

Fire-Detection and -Suppression Systems

The headquarters' building has smoke detectors and fire extinguishers located throughout the building. Fire extinguishers were last inspected in October 2005. Fire trucks and fire personnel are located at the refuge. No other fire-detection or -suppression devices are in place.

The bunkhouse has fire extinguishers located throughout the building. Fire extinguishers were last inspected in October 2005. Smoke detectors are located in the residents quarters of the building. Fire trucks and fire personnel are located at the refuge. No other fire-detection or -suppression devices are in place.

The garage has one fire extinguisher that was last inspected in October 2005. Fire trucks and fire personnel are located at the refuge. No other fire-detection or suppression devices are in place.

Pest Management

Regular monitoring and control of pests as defined in 36 CFR Part 79 is not preformed at any of the refuge buildings. At the headquarters' building, refuge personnel monitor the building as needed; however, pests are rarely a problem. Refuge personnel have placed mouse traps throughout the building. According to the refuge staff, no mice have been caught or seen in the building in two years, and no infestations have been noted.

Refuge personnel monitor all areas of the bunkhouse as needed and have placed mouse traps throughout the building. When garage doors are opened, birds are occasionally located throughout the garage and attic/loft portion. No other infestations, except for the occasional spider or insect, have been noted.

No pest management practices are used in the garage. During the assessment, a mouse infestation was observed in map file cabinets. A protective mask and gloves were worn during the assessment at the request of refuge personnel.

36 CFR Part 79 Compliance Summary

None of the three buildings housing museum property at the Arrowwood NWR complies with 36 CFR Part 79 (e.g., environmental controls, security, fire safety, and pest management). A number of corrective actions are necessary in order for the buildings to comply with the minimum standards. For 36 CFR Part 79 building criteria and attributes, see Appendix 1.

411 DM Repository Evaluation Summary

A facility condition assessment using the 411 DM Facility Checklist was conducted on all three buildings that hold museum property at Arrowwood NWR. All three buildings received a poor condition with the following overall scores: headquarters building, 47%; bunkhouse,20%; and garage,7% (Table 26). The condition score includes individual checklist scores for each space/room in which museum property is held at the refuge. For individual facility/room checklists, criteria, and definitions, please see Appendix 1.

Table 26.
411 DM Facility Checklist Summary at Arrowwood NWR

Building	Space/Room Type[1]	Number Rooms	Standards Met	Applicable Standards	Condition[2]	Percentage
Headquarters' Building	Administrative Office (HQ 1–3)	3	7	15	Poor	47%
	Exhibit	0	n/a	n/a	n/a	n/a
	Storage	0	n/a	n/a	n/a	n/a
Overall Total		**3**				**47%**
Bunkhouse	Administrative Office	1	3	15	Poor	20%
Overall Total		**1**				**20%**
Garage	Administrative Office	1	1	15	Poor	7%
Overall Total		**1**				**7%**

[1] Administrative Office includes offices, lobbies, meeting rooms, hallways, and any other non-dedicated space within a building used to house museum property. Exhibit rooms include any space dedicated to display original documents, objects, or specimens (or copies thereof) for educational and cultural purposes. Storage rooms include space designated for the safekeeping of museum property not currently on exhibition.

[2] A *poor* condition is assigned when 49 percent or less of the applicable standards on the 411 DM Checklist are met for all spaces (storage, exhibit, and administrative office spaces) holding a collection. A *fair* condition is assigned when 50 to 69 percent of the applicable standards on the 411 DM Checklist are met. A *good* condition is assigned when 70 percent or greater of the applicable standards on the 411 DM Checklist are met. Ratings are generated by calculating the percentage by dividing the total applicable standards met for all spaces for a collection (i.e., location) by the total applicable standards for all spaces for a collection.

Rooms in all three buildings received a rating of poor as they did not meet the following 411 DM general standards: written policies or procedures dealing with the management and long-term care of museum property (i.e., control of access and handling of museum property procedures, and emergency, fire safety, and pest management plans); maintenance of recording and monitoring devices for temperature, relative humidity, and light fluctuations; use of appropriate museum-quality containers; and the proper display/exhibit of museum property. For individual facility/room checklists, criteria, and definitions, please see Appendix 3.

In order for the facility to improve its rating to fair or good, FWS and Arrowwood NWR must first develop management standards that address the proper care and preservation for the museum property in their possession.

Rehabilitation Effort Summary and Recommendations

Associated records housed at Arrowwood NWR require certain tasks be completed before they are considered to be compliant with federal and professional curation standards. Rehabilitation effort is based upon the completion of specific tasks that are associated with bringing the materials into compliance with 36 CFR Part 79. A designation of low is assigned in instances where one-to-two tasks are required; high is assigned in instances where more than two tasks are required. Compliance tasks and rehabilitation costs for archaeological collections are listed in Table 27. Rehabilitation costs and formulas can be found in Appendix 3.

Table 27.
Collections Rehabilitation Summary at Arrowwood NWR

Collection Type	Location	Extent (cubic or linear feet)	Rehabilitation Effort	Task	Complete	Incomplete	Estimated Rehabilitation Cost
Associated Documents	HQ1	2.26	High	Arrangement	X		n/a
				Folders		X	$1,400
				Labels		X	$1,400
				Boxes/Fireproof Cabinets	X		n/a
				Finding Aids		X	$1,700
				Security Copy		X	$7,100
Associated Documents	HQ2	6.17	High	Arrangement	X		n/a
				Folders		X	$3,800
				Labels		X	$3,800
				Boxes/Fireproof Cabinets		X	$3,800
				Finding Aids		X	$4,500
				Security Copy		X	$19,400
Associated Documents	Bunkhouse	1.03	High	Arrangement	X		n/a
				Folders		X	$700
				Labels		X	$700
				Boxes/Fireproof Cabinets		X	$700
				Finding Aids		X	$800
				Security Copy		X	$3,300
Associated Documents	Garage	1.92	High	Arrangement		X	$1,300
				Folders		X	$1,200
				Labels		X	$1,200
				Boxes/Fireproof Cabinets		X	$1,200
				Finding Aids		X	$1,400
				Security Copy		X	$6,100

Notes:
1. Rehabilitation effort is based upon the completion of specific tasks that are associated with bringing the objects into compliance with 36 CFR Part 79. Tasks are described as (1) Sorting by provenience and materials unless otherwise noted; (2) Bagging—all materials are placed in appropriate archival-quality, zip-lock bags; (3) Acid-free inserts are created and placed inside each new bag; (4) Boxes—all rebagged objects are placed into new archival boxes; and (5) Labels are applied to all new boxes.
2. Rehabilitation effort is based upon the completion of specific tasks that are associated with bringing the records into compliance with 36 CFR Part 79. Tasks are described as (1) Arrangement of records in a logical order; (2) Repackaging all records in archival-quality secondary containers; (3) Labels—all secondary containers are labeled in pencil or indelible ink; (4) Boxes—all records are placed into fireproof cabinets or new archival cardboard boxes with acid-free labels that are applied to new boxes; (5) Finding Aids—a formal description of the records collection is prepared; and (6) Preservation/Security Copies have been made and are stored off-site.
3. Rehabilitation costs are rounded up to the nearest hundred dollar amount.

Associated records (11.43 ft^2) have a high rehabilitation effort. In order for the collections to meet the standards of 36 CFR Part 79, the following steps should be taken: (1) remove all foreign objects (e.g., paper clips, staples) and place records in appropriate archival containers (e.g., acid-free file boxes and folders); (2) store records in a manner that will protect them from fire, theft, damage, and destruction, the exception are the records in the refuge manager's office, which are already housed in fire-proof cabinets, (3) create a folder-by-folder finding aid for the collection, and (4) create a preservation/security copy of the records and store it in a secure, off-site location.

Recommendations

1. Install security measures that include detection features (e.g., intrusion alarms).

2. Install a fire-suppression system.

3. Develop the following written policies and procedures: scope of collections statement, fire, emergency, and pest management plans.

3. Move all records to the HQ building.

4. Maps stored in the garage need immediate attention. A mouse infestation has destroyed or severely damaged fifty-to seventy-five percent of the maps that are currently stored there. Maps should be rehabilitated and conserved and moved into the headquarters building as soon as possible.

Comments/Issues

1. A limited number of education programs can be implemented by the refuge because of its location and a lack of personnel.

2. No large scale archaeological surveys have been conducted on the refuge.

3. No scope of collections has been established at the refuge

4. No human remains or NAGPRA-related materials are stored at the refuge.

5. Ten zoological specimens are located throughout the HQ building; however they were not counted as museum property as they do not have any long-term educational or intrinsic value.

6. Arrowwood had the best and worst building scores from the 411 DM facility checklist.

7. At the request of refuge personnel, a protective mask was worn during the assessment of the maps in the garage.

8. Nine full-time personnel work at the refuge. Two in-site residences and one bunkhouse are located on the refuge.

8

Chase Lake National Wildlife Refuge
Woodworth, North Dakota

Museum Property Management at Chase Lake NWR

Museum property is stored in one building at the Chase Lake NWR—the headquarters' building (Figure 57). The Refuge was visited on June 9, 2006.

Figure 57. Exterior view of the Chase Lake NWR headquarters' building.

Within the Chase Lake headquarters' building, two rooms house museum property—an office/lobby (HQ1) and the basement (HQ2). Table 28 lists the museum property disciplines and totals examined during the assessment at this facility. Detailed building and storage room conditions are described in the Museum Property Storage summary.

Table 28.
Museum Property Disciplines and Totals at
Chase Lake NWR Headquarters' Building

Storage Location			
HQ1	**HQ2**	**Disciplines**[1]	**Extent**
	X	Associated Documents (Records)[2]	2.78 linear feet
X		Zoology	27 mounted or representative specimens

[1] Only those museum property disciplines in the headquarters building are listed in the table.
[2] Includes photographs and oversized materials.

Museum Property Storage Summary

Lobby/Office

The lobby/office (HQ 1), which is located inside the building entrance, currently holds zoological specimens. The room is fifty percent full. None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Two entrance doors and windows are present. Windows are protected with blinds; however, the doors are not. No hazardous materials are stored in the room. All of the materials have been cleaned, mounted, and labeled.

Museum Property Housing Summary

Zoological—Twenty-seven zoological specimens are located in the office/lobby. Materials are stored loose on wooden shelves or on hands-on exhibits and are labeled with the species name.

Basement

The basement (HQ 2) currently houses associated records only and is approximately seventy-five percent full. None of the collections are stored under pipes, and the floor load is sufficient to support the weight of the materials currently held. Materials are stored in a wooden file cabinet and two map file cabinets (Figures 58 and 59). Five windows are present in the room, and they are protected with miniblinds. No hazardous materials are stored in the room. All of the materials have been sorted and cleaned and approximately eight-to-ninety percent of the records have been labeled.

Figure 58. A wooden file cabinet is used for records storage at Chase Lake NWR.

Figure 59. View of a map file cabinet in the basement at Chase Lake NWR.

Museum Property Housing Summary

Associated Records—Oversized maps, photographs, reports, and other associated records are stored in this room. Records are stored within the drawers in a variety of secondary containers—acidic, expandable, and hanging folders, magazine file boxes, envelopes, plastic slide sleeves, and loose within the drawers (Figures 60 and 61). A large quantity of staples, rubber bands, masking tape, and binders and paper clips were noted. All of the records have been sorted and cleaned. Approximately ninety percent are labeled directly or with adhesive labels in either ink or pencil with the project, location, or year.

Figure 60. Secondary containers housing associated records at Chase Lake NWR.

Figure 61. Drawer of aerial photographs stored at Chase Lake NWR.

36 CFR Part 79 Compliance

Building Condition and Structural Adequacy

The Chase Lake NWR headquarters' building is unique. The basement and foundation were constructed on the refuge; however, the building was acquired and transported to the refuge from Minot Air Force Base in 1999. The building is not easily accessible from major highways because the refuge is located in a rural, unpopulated area (located on a gravel road one mile from the highway). The building has adequate parking for visitor's and researchers, no loading dock, and is not located in a hurricane or earthquake zone or near nuclear facilities; however, it is located in a floodplain. The building, which has one story below grade and one above grade, has a concrete foundation, aluminum siding exterior walls, and a shingled roof. No external renovations have taken place on the building. A few cracks were present in the foundation. The building has 15 aluminum-framed windows, all of which are watertight and airtight. Building utilities include running water, telephone, electrical, and intranet services. Public restrooms also are present.

Heating, Ventilating, and Air Conditioning Systems, and Environmental Controls

A central air conditioning and forced-air heat system furnishes the structure's heating and cooling needs. Dust filters are present and changed as needed. A contractor cleans the building on a weekly basis. Neither temperature nor humidity are monitored or controlled within the building.

Space Allocation and Hazardous Chemical Use and Storage

The headquarters' building has the following components: meeting/conference room, materials/supplies storage area, basement, lobby/information area, kitchen/break room, gun safe, and offices. No hazardous chemicals are used or stored in the building except for basic cleaning supplies/agents.

Security System

Major entrances and office doors are secured with key locks and dead-bolt locks, while all windows are secured with window locks. An intrusion alarm wired to a security company is also in place. There have been no episodes of unauthorized entry.

Fire-Detection and -Suppression Systems

The headquarters' building has smoke detectors and manual fire alarms throughout the building. Fire extinguishers, which were last inspected in October 2005, are present at key locations. No other fire-detection devices are in place, and no fire-suppression system is present.

Pest Management

Regular monitoring and control of pests as defined in 36 CFR Part 79 is not conducted at the headquarters' building. Refuge personnel monitor all areas as needed and have placed mouse traps throughout the building. No infestations, except for the occasional spider or mouse, have been noted by the refuge staff.

36 CFR Part 79 Compliance Summary

The headquarters' building at Chase Lake NWR does not comply with 36 CFR Part 79 (i.e., environmental controls, security, fire safety, and pest management). A number of corrective actions are necessary in order for the buildings to comply with the minimum standards. For 36 CFR Part 79 building criteria and attributes, see Appendix 1.

411 DM Repository Evaluation Summary

A facility condition assessment using the 411 DM Facility Checklist was conducted on the headquarters' building, and the building received a poor condition, with an overall score of 33% (Table 29). The condition score includes individual checklist scores for each space/room in which museum property is held at the refuge. For individual facility/room checklists, criteria, and definitions, please see Appendix 1.

Table 29.
411 DM Facility Checklist Summary at Chase Lake NWR

Building	Space/Room Type[1]	Number Rooms	Standards Met	Applicable Standards	Condition[2]	Percentage
Headquarters' Building	Administrative Office	2	5	15	Poor	33%
	Exhibit	0	n/a	n/a	n/a	n/a
	Storage	0	n/a	n/a	n/a	n/a
Overall Total		**2**				**33%**

1. Administrative Office includes offices, lobbies, meeting rooms, hallways, and any other non-dedicated space within a building used to house museum property. Exhibit rooms includes any space dedicated to display original documents, objects, or specimens (or copies thereof) for educational and cultural purposes. Storage rooms include space designated for the safekeeping of museum property not currently on exhibition.
2. A *poor* condition is assigned when 49 percent or less of the applicable standards on the 411 DM Checklist are met for all spaces (storage, exhibit, and administrative office spaces) holding a collection. A *fair* condition is assigned when 50 to 69 percent of the applicable standards on the 411 DM Checklist are met. A *good* condition is assigned when 70 percent or greater of the applicable standards on the 411 DM Checklist are met. Ratings are generated by calculating the percentage by dividing the total applicable standards met for all spaces for a collection (i.e., location) by the total applicable standards for all spaces for a collection.

Both rooms housing museum property at Chase Lake received a rating of poor as they did not meet the following 411 DM general standards: written policies or procedures dealing with the management and long-term care of museum property (i.e., control of access and handling of museum property procedures, and emergency, fire safety, and pest management plans); maintenance of recording and monitoring temperature, relative humidity, and light fluctuations; appropriate museum-quality containers; and the proper museum practices when displaying/exhibiting museum property.

Rehabilitation Effort Summary and Recommendations

Associated records housed at Chase Lake NWR require certain tasks be completed before they are considered to be compliant with federal and professional curation standards. Rehabilitation effort is based upon the completion of specific tasks that are associated with bringing the materials into compliance with 36 CFR Part 79. A designation of low is assigned in instances where one-to-two tasks are required; high is assigned in instances where more than two tasks are required. Compliance tasks and rehabilitation costs for archaeological collections are listed in Table 30. Rehabilitation costs and formulas can be found in Appendix 3.

Table 30.
Collections Rehabilitation Summary at Chase Lake NWR

Collection Type	Location	Extent (cubic and linear feet)	Rehabilitation Effort	Task	Complete	Incomplete	Estimated Rehabilitation Cost
Associated Documents	HQ2	2.78	High	Arrangement	X		n/a
				Folders		X	$1,800
				Labels		X	$1,800
				Boxes/Fireproof Cabinets		X	$1,800
				Finding Aids		X	$2,000
				Security Copy		X	$8,800

Notes:
1. Rehabilitation effort is based upon the completion of specific tasks that are associated with bringing the objects into compliance with 36 CFR Part 79. Tasks are described as (1) Sorting by provenience and materials unless otherwise noted; (2) Bagging—all materials are placed in appropriate archival-quality, zip-lock bags; (3) Acid-free inserts are created and placed inside each new bag; (4) Boxes—all rebagged objects are placed into new archival boxes; and (5) Labels are applied to all new boxes.
2. Rehabilitation effort is based upon the completion of specific tasks that are associated with bringing the records into compliance with 36 CFR Part 79. Tasks are described as (1) Arrangement of records in a logical order; (2) Repackaging all records in archival-quality secondary containers; (3) Labels—all secondary containers are labeled in pencil or indelible ink; (4) Boxes—all records are placed into fireproof cabinets or new archival cardboard boxes with acid-free labels that are applied to new boxes; (5) Finding Aids—a formal description of the records collection is prepared; and (6) Preservation/Security Copies have been made and are stored off-site.
3. Rehabilitation costs are rounded up to the nearest hundred dollar amount.

Associated records, which total 2.78 ft^2, have a high rehabilitation effort. In order for the collections to meet the standards of 36 CFR Part 79, the following tasks should be performed: (1) remove all foreign objects (e.g., paper clips, staples) and place records in appropriate archival containers (e.g., acid-free file boxes and folders), (2) store records in a manner that will protect them from fire, theft, damage, and destruction, (3) create a folder-by-folder finding aid for all the records, and (4) create a preservation/security copy of the records and store it in a secure, off-site location.

Recommendations

1. Install security measures that include detection features (e.g., intrusion alarms).

2. Install a fire-suppression system.

3. Develop the following written policies and procedures: scope of collections statement, fire, emergency, and pest management plans.

Comments/Issues

1. A limited number of education programs can be implemented by the refuge because of its location and a lack of personnel.

2. No scope of collections has been established at the refuge.

3. No human remains or NAGPRA-related materials are stored at the refuge.

4. Chase Lake was established in 1904 and is one of the oldest refuges in the system and the second oldest in North Dakota. A large white pelican study is conducted on the refuge every year as the refuge is one of the only breeding grounds for this species. This study has produced an important amount of associated documentation over the years.

5. The refuge is located in Woodworth, North Dakota, which is a large rural area. The headquarters is accessible via gravel winding roads. The refuge is actually located 13 miles from the headquarters building.

6. Copies of Chase Lake NWR records (0.38 linear feet) are stored at Arrowwood NWR.

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FINDINGS SUMMARY

The findings section begins with information pertaining to building compliance with 36 CFR Part 79, the federal curation regulation that identifies minimum requirements for the housing of federally owned and administered archaeological collections, as well as requirements identified in the Department of Interior Departmental Manual (411 DM).

Following an examination of the refuge buildings, SLD looked at artifact and record collections to determine their curatorial needs. Collections at each repository were examined and assigned tasks that require completion before the materials can comply with 36 CFR Part 79. From these tasks, rehabilitation costs were estimated that will allow FWS use for future planning purposes.

Building and Collection Findings

Twelve buildings in six states were examined by SLD during the course of the museum property examination for FWS (Table 31).

Table 31.
Repositories Housing FWS Museum Property

Refuge	City	State	Number of Buildings
•Izembek National Wildlife Refuge	Cold Bay	AK	2
•Crab Orchard National Wildlife Refuge	Marion	IL	2
•Marais des Cygnes National Wildlife Refuge	Pleasanton	KS	1
•Mingo National Wildlife Refuge	Puxico	MO	1
•Ft. Niobrara National Wildlife Refuge	Valentine	NE	2
•Arrowwood National Wildlife Refuge	Pingree	ND	3
•Chase Lake National Wildlife Refuge	Woodworth	ND	1
Total			**12**

A complete building evaluation was conducted for all facilities. Information derived from the building evaluation was used to determine the level of compliance with 36 CFR Part 79 for each repository. To best accomplish this assessment, statistics pertaining to environmental controls, security, fire safety, and pest management for each repository were collected and described below. In order to comply with 36 CFR Part 79, refuge buildings need to address the factors and attributes listed in Table 32. Minimally, compliance with 36 CFR Part 79 should include provisions for each attribute within each factor.

In summary, the following can be concluded: none of the 12 buildings housing museum property meet the minimum standards of 36 CFR Part 79.

Table 32.
Criteria to Determine if Buildings Meet the Minimum Requirements of 36 CFR Part 79[1]

Repository	Environmental Controls	Security	Fire Safety	Pest Management	Meets Minimum 36 CFR 79 Standards
Izembek National Wildlife Refuge, Visitor's Center	No	No	No	No	**No**
Izembek National Wildlife Refuge, Bunkhouse	No	No	No	No	**No**
Crab Orchard National Wildlife Refuge, Administration Building	Yes	No	No	Yes	**No**
Crab Orchard National Wildlife Refuge, Visitor's Center	Yes	Yes	No	Yes	**No**
Marais des Cygnes National Wildlife Refuge	Yes	No	No	Yes	**No**
Mingo National Wildlife Refuge	Yes	No	No	Yes	**No**
Ft. Niobrara National Wildlife Refuge, Visitor's Center	Yes	No	No	Yes	**No**
Ft. Niobrara National Wildlife Refuge, Old Museum Building	No	No	No	No	**No**
Arrowwood National Wildlife Refuge, Headquarters' Building	Yes	No	No	No	**No**
Arrowwood National Wildlife Refuge, Bunkhouse	No	No	No	No	**No**
Arrowwood National Wildlife Refuge, Garage	No	No	No	No	**No**
Chase Lake National Wildlife Refuge	Yes	Yes	No	No	**No**

Notes:
1. Buildings that have been determined to meet the minimum requirements for 36 CFR Part 79 possess the following.
Environmental Controls: Minimally, adequate environmental controls should include air conditioning regulation, heat regulation, humidity monitoring/regulation, and janitorial regulation.
Security: Minimally, adequate security measures should include detection (intrusion alarm) and deterrent measures (e.g., controlled access key locks, deadbolt locks).
Fire Safety: Minimally, an adequate fire-safety system should possess adequate detection (wired or manual fire alarm) and suppression features (sprinkler system).
Pest Management: Minimally, adequate pest management should include janitorial regulation, pest monitoring, and pest control.

A total of 45.77 ft^3 of artifacts and 61.43 linear feet of associated records was examined during the museum property assessment at seven National Wildlife Refuges. Table 33 summarizes the archaeological collections and associated records assessed for this project.

Table 33.
Quantity of Archaeological Collections and Associated Records Examined

Refuge		Artifacts (ft3)	Records (linear feet)
Izembek NWR			
	Visitor's Center	0.22	18.59
	Bunkhouse	n/a	1.71
Crab Orchard NWR			
	Administration Building	0.08	6.26
	Visitor's Center	2.65	0.17
Marais des Cygnes NWR			
	Headquarters' Building	6.46	1.18
Mingo NWR			
	Visitor's Center	36.36	19.11
Ft. Niobrara NWR			
	Visitor's Center	30.82	0.13
	Old Museum Building	6.58	43.80
Arrowwood NWR			
	Headquarters' Building	n/a	8.43
	Bunkhouse	n/a	1.03
	Garage	n/a	1.92
Chase Lake			
	Visitor's Center	n/a	2.78
TOTAL		**83.17**	**105.11**

Note: In reviewing tables in the report there may be discrepancies in totals due to individual rounding operations in the database management software.

Object and record collections also were evaluated to determine their rehabilitation status. This information is pertinent in order to more fully understand what each collection requires to bring it into compliance with existing federal standards and guidelines. Listed in Table 34 is the level of rehabilitation needed and cost for bringing the collections into compliance with 36 CFR Part 79. Using SLD rehabilitation standards, a cost estimate for accomplishing rehabilitation tasks was prepared. These costs, which are located in Appendix 3, are based on SLD expertise only and should be viewed as gross estimates for collection rehabilitation.

Table 34.
Level and Cost of Rehabilitation for Examined Collections

Refuge	Building	Artifact Rehabilitation Effort	Artifact Rehabilitation Cost	Record Rehabilitation Effort	Record Rehabilitation Cost	Overall Rehabilitation Cost
Izembek	Visitor's Center	High	$200	High	$105,800	$106,000
	Bunkhouse	n/a	n/a	High	$10,000	$10,000
Crab Orchard	Administration Building	High	$100	High	$32,000	$32,100
	Visitor's Center	High	$2,200	High	$1,100	$3,300
Marais des Cygnes	Headquarters' 'Building	High	$5,000	High	$7,200	$12,200
Mingo	Visitor's Center	High	$27,400	High	$106,600	$134,000
Ft. Niobrara	Visitor's Center	High	$23,000	High	$400	$23,400
	Old Museum Building	High	$6,300	High	$192,700	$199,000
Arrowwood	Headquarters' Building	n/a	n/a	High	$46,900	$46,900
	Bunkhouse	n/a	n/a	High	$6,200	$6,200
	Garage	n/a	n/a	High	$12,400	$12,400
Chase Lake	Headquarters' Building	n/a	n/a	High	$16,200	$16,200
TOTAL		**High**	**$64,200**	**High**	**$537,500**	**$601,700**

Note:
1. Rehabilitation effort is based upon the completion of specific tasks that are associated with bringing the materials into compliance with 36 CFR Part 79. In instances where one-to-two tasks are required; a rating of **Low** rehabilitation was issued. If two or more tasks are required, a rating of **High** rehabilitation was issued. Specific tasks and cost formulas are located in Appendix 3.
2. Rehabilitation costs are rounded up to the nearest hundred dollar amount.

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References Cited

U.S. Department of the Interior

1991 *36 CFR Part 79: Curation of Federally-Owned and Administered Archeological Collections.* U.S. Department of the Interior, Washington, D.C.

1993 *Museum Property Handbook (411 DM): Volume II: Documentation of Museum Property.* U.S. Department of the Interior, Office of the Secretary, Washington, D.C.

Appendix 1

411 DM Facility Checklist and 36 CFR Part 79 Factors and Attributes

A facility condition assessment was conducted using the 411 DM facility checklist for all refuge buildings that house museum property. The checklists resulted in overall percentage scores and condition (good, fair, or poor) at each facility. The condition score includes individual checklist scores for all spaces (storage, exhibit, or administrative office) in which museum property is currently stored. Each refuge building and collections storage area that held museum property received assessments, which are provided below.

In order for buildings that house museum property to comply with 36 CFR Part 79, the following factors and attributes listed need to be addressed at each refuge. Minimally, compliance with 36 CFR Part 79 should include provisions for each attribute within each factor. If a factor/condition was present, an X was placed in the corresponding box below.

Izembek National Wildlife Refuge Facilities

411 DM Questions	Visitor Center	Bunkhouse	36 CFR 79 Factors	Visitor Center	Bunkhouse
Questions 1-42 relate to **STORAGE** space only.					
1. Monitor **and** record temperature levels.			Air conditioning regulation		
2. Avoid abrupt changes in temperature.	X		Heat regulation	X	X
3. Maintain temperature levels within the recommended range of 21°C to 23°C (70°F to 74°F) where human comfort is a factor.			Humidity monitoring and regulation		
4. Temperature level for mixed collections is reduce gradually to a cooler level, avoiding condensation of moisture on cold surfaces, where human comfort is not a factor.			Janitorial Regulation	X	X
5. Monitor **and** record relative humidity (RH) levels.			Dust regulation (filters)		
6. Record RH data continuously for one year **and** evaluate the data before establishing acceptable ranges and limits.			Security Detection (intrusion alarms)		

7. Maintain RH levels below 65% to reduce the potential for mold growth.			Security Deterrent (guards, TV monitors)		
8. Maintain RH levels above 35% to prevent desiccating and shrinking of organic materials (e.g., wood, paper, textiles, leather, hair, fur, feathers, horn, bone, ivory, shell, grasses, fibers, bark, lacquers, and waxes). **If no organic materials are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			Security Deterrent (controlled access, dead-bolt locks)	X	X
9. Establish acceptable ranges **and** limits of RH levels for space, based on the local climate, the nature and condition of the materials constituting the collection, the RH levels to which the materials have been acclimatized, the structure housing museum property, and other relevant factors; ideally, fluctuations should not exceed 3% RH per month.			Fire Detection (wired or manual alarms)	X	X
10. Maintain the RH level within an acceptable range **and** avoid extreme levels **and** wide fluctuations.			Fire Suppression (Sprinkler system)		
11. The equipment (e.g., thermohygrometers, hygrometers, hygrothermographs, psychrometers, and data loggers) used to monitor RH **or** temperature are maintained and calibrated according to the manufacturer's recommendations. **Note, it you answered yes to 1. or 5. above, then enter either a 'Yes' or 'No' response.**			Fire Suppression (fire extinguishers, firewalls)	X	X
12. Light levels are maintained at or below 50 lux (5 foot-candles) for especially light-sensitive materials (e.g., dyed organic material, textiles, watercolors, tapestries, prints and drawings, manuscripts, dyed leather, wallpapers, natural history specimens such as botanical specimens, fur and feathers, and original photographs, including negatives, transparencies, and prints). **If no light-sensitive materials are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			Pest Monitoring (routine check of storage areas)		
13. Light levels are maintained at or below 200 lux (20 foot-candles) for undyed and untreated organic materials, oil and tempera paintings, and finished wooden surfaces; **and** when these materials are housed with other light-sensitive materials, then the light levels must be maintained at the appropriate level for the most sensitive materials. **If no museum property consisting of undyed or untreated organic materials, oil or tempera paintings, or finished wooden surfaces are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			Pest Control (spraying, insect traps)		
14. Light levels do not exceed 300 lux (30 foot-candles); **and** when items of mixed sensitivity are located within the same space, then the light levels must be maintained at the appropriate level for the most sensitive item.					

15. No light is present in the storage area, except for short durations required for access **or** housekeeping.	X				
16. Monitor **and** record the level of ultraviolet (UV) radiation from all sources **and** if the UV radiation level exceeds 75 microwatts per lumen, control it by installing UV-filtering material.					
17. Establish **and** maintain an Integrated Pest Management program in the space.					
18. Monitor **and** record gaseous **and** particulate pollution; **and** when detected, control levels of gaseous and particulate pollution to the lowest practical limits.					
19. Record visitor **and** researcher access to storage areas using a consistent system (e.g., a sign-in log).	X				
20. Written policies and/or procedures are used that control access to **and** govern the use of keys **and** combinations to enter the space.					
21. Written policies and/or procedures are used for opening **and** closing the space.					
22. Written policies and/or procedures are used for accessing museum property **and** museum records in the space.					
23. The appropriate combination of mechanical **and** electronic systems are used to secure the space.					
24. A written Emergency Management Plan exists for the space **and** specifically identifies the museum property located within the space **and** addressed any special needs that may exist regarding the museum property.					
25. Equipment and/or systems, appropriate to the nature of museum property and to the physical structure of the location, is installed to detect **and** suppress fire in the space.					
26. Given the nature of the structure, to the extent possible, make the space within it fire-resistant.					
27. Museum records located in the space are located in an appropriate fire- **and** burglary-resistant container **or** vault which is locked when not in use. **If no records are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
28. A written Fire Plan exists **and** contains information specific to the needs of the museum property within the space as it relates to preventing, detecting, and suppressing fire.					
29. The storing of flammable liquids is avoid within the space. **If flammable liquids or materials is present, then enter "1" in the "Yes" column, otherwise enter "1" in the "No" column.**					
30. The space is cleaned on a regular schedule.	X				
31. Written policies, rules, and/or procedures are used for handling museum property **and** meeting housekeeping standards within the space.					

32. Written policies, rules, and/or procedures are used to prohibit smoking, drinking, **and** eating in the space.	X				
33. Museum property in the space is examined regularly to detect evidence of deterioration **and** the results are documented accordingly.					
34. Conservation treatments are arranged to stabilize the condition of museum property within the space following professional conservation standards and practices.					
35. The space is large enough to accommodate the museum property that currently exist within it.	X				
36. The space will accommodate anticipated collection growth. **If the Unit's Management Plan and the curation agreement does not specify collection growth within this space, then enter "1" in the "DNA" column and a comment to that effect.**					
37. Dedicated storage space will be provided in all newly constructed and remodeled storage areas. **If the Unit's Management Plan and the curation agreement does not specify collection growth within this space, then enter "1" in the "DNA" column and a comment to that effect.**					
38. To the extend possible, the spaces is dedicated to the storage of only museum property.					
39. The storage space is organized in a manner to allow for the efficient use of storage equipment and techniques.					
40. The storage space is organized in a manner to allow for optimum, effective access to the museum property located within it.					
41. The museum property is kept in appropriate containers and/or equipment **and** the appropriate museum-quality materials is used for packaging. Note, records and most specimens need special containers or mounts.					
42. Materials **and** techniques are used that protect museum property from damage due to shock or vibration when storage space is located within a high-risk earthquake zones (see Seismic Risk-Zone Map of 1992 at http://pubs.usgs.gov/fs/2005/3052/). **If the space is not located with a high-risk earthquake zone, then enter "1" in the "yes" column, otherwise enter "1" in the "no" column.**					
Percentage for Storage Room	**16%**				
Questions 43-79 relate to **EXHIBIT** Space only.					
43. Monitor **and** record temperature levels.					
44. Avoid abrupt changes in temperature.	X				
45. Maintain temperature levels within the recommended range of 21°C to 23°C (70°F to 74°F) where human comfort is a factor.					
46. Monitor **and** record relative humidity (RH) levels.					

47. Record RH data continuously for one year **and** evaluate the data before establishing acceptable ranges and limits.					
48. Maintain RH levels below 65% to reduce the potential for mold growth.					
49. Maintain RH levels above 35% to prevent desiccating and shrinking of organic materials (e.g., wood, paper, textiles, leather, hair, fur, feathers, horn, bone, ivory, shell, grasses, fibers, bark, lacquers, and waxes). **If no organic materials are present within the space, then enter "1" in the "DNA" column.**					
50. Establish acceptable ranges **and** limits of RH levels for space, based on the local climate, the nature and condition of the materials constituting the collection, the RH levels to which the materials have been acclimatized, the structure housing museum property, and other relevant factors; ideally, fluctuations should not exceed 3% RH per month.					
51. Maintain RH levels within an acceptable range **and** avoid extreme levels and wide fluctuations.					
52. The equipment (e.g., thermohygrometers, hygrometers, hygrothermographs, psychrometers, and data loggers) used to monitor RH **or** temperature are maintained and calibrated according to the manufacturer's recommendations. **Note, it you answered yes to either 43. or 46. above, then enter either a 'Yes' or 'No' response.**					
53. Light levels are maintained at or below 50 lux (5 foot-candles) for especially light-sensitive materials (e.g., dyed organic material, textiles, watercolors, tapestries, prints and drawings, manuscripts, dyed leather, wallpapers, natural history specimens such as botanical specimens, fur and feathers, and original photographs, including negatives, transparencies, and prints). **If no light-sensitive materials are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
54. Light levels are maintained at or below 200 lux (20 foot-candles) for undyed and untreated organic materials, oil and tempera paintings, and finished wooden surfaces; **and** when these materials are housed with other light-sensitive materials, then the light levels must be maintained at the appropriate level for the most sensitive materials. **If no museum property consisting of undyed or untreated organic materials, oil or tempera paintings, or finished wooden surfaces are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
55. Light levels do not exceed 300 lux (30 foot-candles); **and** when items of mixed sensitivity are located within the same space, then the light levels must be maintained at the appropriate level for the most sensitive item.					
56. Monitor **and** record the level of ultraviolet (UV) radiation from all sources **and** if the UV radiation level exceeds 75 microwatts per lumen, control it by installing UV-filtering material.					

57. Establish **and** maintain an Integrated Pest Management program in the space.					
58. Monitor **and** record gaseous **and** particulate pollution; **and** when detected, control levels of gaseous and particulate pollution to the lowest practical limits.					
59. Written policies and/or procedures are used that control access to **and** govern the use of keys and combinations to enter the space.					
60. Written policies and/or procedures are used for opening **and** closing the space.					
61. Written policies and/or procedures are used for accessing museum property **and** museum records in the space.					
62. The appropriate combination of mechanical **and** electronic systems are used to secure the space.					
63. A written Emergency Management Plan exists for the space **and** specifically identifies the museum property located within the space **and** addressed any special needs that may exist regarding the museum property.					
64. Equipment and/or systems, appropriate to the nature of museum property and to the physical structure of the location, is installed to detect **and** suppress fire in the space.					
65. Given the nature of the structure, to the extent possible, make the space within it fire-resistant.					
66. Museum records located in the space are located in an appropriate fire- **and** burglary-resistant container **or** vault which is locked when not in use. **If no records are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
67. A written Fire Plan exists **and** contains information specific to the needs of the museum property within the space as it relates to preventing, detecting, and suppressing fire.					
68. The space is cleaned on a regular schedule.	X				
69. Written policies, rules, and/or procedures are used for handling museum property **and** meeting housekeeping standards within the space.					
70. Written policies, rules, and/or procedures are used to prohibit smoking, drinking, **and** eating in the space.	X				
71. Museum property in the space is examined regularly to detect evidence of deterioration **and** the results are documented accordingly.					
72. Conservation treatments are arranged to stabilize the condition of museum property within the space following professional conservation standards and practices.					
73. Museum property exhibited in the space is done so in ways that minimize risks to it.	X				
74. Consider how best to preserve, protect, and maintain museum property when planning exhibits in the space.					

75. Design and fabricate exhibit cases, to be placed in the space, in ways that promote security, housekeeping, **and** preservation of the museum property.					
76. Protect freestanding museum property within the space by using an appropriate combination of physical, electronic, **and** staffing methods. **If no freestanding museum property is present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
77. Substitute environmentally sensitive objects on a scheduled basis to minimize deterioration. **If no environmentally sensitive objects are present within the space, then enter "1" in the "DNA" column and a comment to that effect**.					
78. Use mounts constructed of museum-quality material to support objects when necessary. **If no items require mounts within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
79. Avoid exhibiting original documents, whenever possible, by using copies. **If documents are not part of the exhibit within the space, then enter "1" in the "DNA" column and a comment to that effect.**	X				
Percentage for Exhibit Space	**15%**				
Questions 80–98 relate to **Administrative Office** (DISPLAY) space only.					
80. Keys to the space **and** display cases are controlled.	X	X			
81. Written policies and/or procedures are used for opening **and** closing the space.					
82. Written guidance exist on how to safely evacuate museum property in the event of a disaster (e.g., storm, flood, or fire).					
83. The space is protected from unauthorized entry.	X	X			
84. A written Fire Plan exists **and** contains information specific to the needs of the museum property within the space as it relates to preventing, detecting, and suppressing fire.					
85. Written policies and/or procedures are used to address accessing **and** moving museum property within the space.					
86. Written policies, rules, and/or procedures are used to prohibit smoking in the space.	X	X			
87. Monitor, record, evaluate, **and** control relative humidity (RH) levels **and** temperature to the extent possible.					
88. Keep rapid fluctuations of RH levels **and** temperature to a minimum **and** avoid harmful extremes.					
89. Monitor **and** control ultraviolet (UV) radiation from all sources **and** if the UV radiation level exceeds 75 microwatts per lumen, control it by installing UV-filtering material.					

90. Monitor **and** control visible light, to the extent practical, 1) at or below 50 lux (5 foot-candles) for especially light-sensitive materials (e.g., dyed organic material, textiles, watercolors, tapestries, prints and drawings, manuscripts, dyed leather, wallpapers, natural history specimens such as botanical specimens, fur and feathers, and original photographs, including negatives, transparencies, and prints); 2) at or below 200 lux (20 foot-candles) for undyed and untreated organic materials, oil paintings and tempera paintings, and finished wooden surfaces; and 3) never exceed 300 lux (30 foot-candles) **and** when items of mixed sensitivity are exhibited together, then the light levels must be maintained at the appropriate level for the most sensitive item.					
91. Establish and maintain an Integrated Pest Management program in the space.					
92. Written policies, rules, and/or procedures are used for handling museum property and meeting housekeeping standards within the space.					
93. Properly frame and secure two-dimensional art (e.g., painting, sketch). **If no two-dimensional art is present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
94. Mat **and** protect (with glass or another appropriate material) watercolor paintings, prints, and drawings using archival-quality material. **If no water color paintings, prints or drawings are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
95. Display museum property in areas that provide protection from accidental damage.	X				
96. Written policies, rules, and/or procedures are used to prohibit the use of museum property for secondary functions (e.g., basket as a container for waste or plants; hammerstone as a paper weight).					
97. Textiles are displayed in a manner so that their weight is distributed evenly. **If no textiles are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
98. Prevent metals **and** untreated wood from touching textiles. **If no textiles are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
Percentage for Administrative Office	**27%**	**20%**			
	Visitor's Center	**Bunkhouse**			
Overall percentage of Rooms Housing Museum Property at Izembek NWR	**18%**	**20%**			

Crab Orchard National Wildlife Refuge Facilities

411 DM Questions	Administrative Building	Visitor Center	36 CFR 79 Factors	Administrative Building	Visitor Center
Questions 1-42 relate to **STORAGE** space only.					
1. Monitor **and** record temperature levels.			Air conditioning regulation	X	X
2. Avoid abrupt changes in temperature.			Heat regulation	X	X
3. Maintain temperature levels within the recommended range of 21°C to 23°C (70°F to 74°F) where human comfort is a factor.			Humidity monitoring and regulation		
4. Temperature level for mixed collections is reduce gradually to a cooler level, avoiding condensation of moisture on cold surfaces, where human comfort is not a factor.			Janitorial Regulation	X	X
5. Monitor **and** record relative humidity (RH) levels.			Dust regulation (filters)		
6. Record RH data continuously for one year **and** evaluate the data before establishing acceptable ranges and limits.			Security Detection (intrusion alarms)		X
7. Maintain RH levels below 65% to reduce the potential for mold growth.			Security Deterrent (guards, TV monitors)		
8. Maintain RH levels above 35% to prevent desiccating and shrinking of organic materials (e.g., wood, paper, textiles, leather, hair, fur, feathers, horn, bone, ivory, shell, grasses, fibers, bark, lacquers, and waxes). **If no organic materials are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			Security Deterrent (controlled access, dead-bolt locks)	X	X
9. Establish acceptable ranges **and** limits of RH levels for space, based on the local climate, the nature and condition of the materials constituting the collection, the RH levels to which the materials have been acclimatized, the structure housing museum property, and other relevant factors; ideally, fluctuations should not exceed 3% RH per month.			Fire Detection (wired or manual alarms)	X	X
10. Maintain the RH level within an acceptable range **and** avoid extreme levels **and** wide fluctuations.			Fire Suppression (Sprinkler system)		
11. The equipment (e.g., thermohygrometers, hygrometers, hygrothermographs, psychrometers, and data loggers) used to monitor RH **or** temperature are maintained and calibrated according to the manufacturer's recommendations. **Note, it you answered yes to 1. or 5. above, then enter either a 'Yes' or 'No' response.**			Fire Suppression (fire extinguishers, firewalls)	X	X
12. Light levels are maintained at or below 50 lux (5 foot-candles) for especially light-sensitive materials (e.g., dyed organic material, textiles, watercolors, tapestries, prints and drawings, manuscripts, dyed leather, wallpapers, natural			Pest Monitoring (routine check of storage areas)	X	X

history specimens such as botanical specimens, fur and feathers, and original photographs, including negatives, transparencies, and prints). **If no light-sensitive materials are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
13. Light levels are maintained at or below 200 lux (20 foot-candles) for undyed and untreated organic materials, oil and tempera paintings, and finished wooden surfaces; **and** when these materials are housed with other light-sensitive materials, then the light levels must be maintained at the appropriate level for the most sensitive materials. **If no museum property consisting of undyed or untreated organic materials, oil or tempera paintings, or finished wooden surfaces are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			Pest Control (spraying, insect traps)	X	X
14. Light levels do not exceed 300 lux (30 foot-candles); **and** when items of mixed sensitivity are located within the same space, then the light levels must be maintained at the appropriate level for the most sensitive item.					
15. No light is present in the storage area, except for short durations required for access **or** housekeeping.					
16. Monitor **and** record the level of ultraviolet (UV) radiation from all sources **and** if the UV radiation level exceeds 75 microwatts per lumen, control it by installing UV-filtering material.					
17. Establish **and** maintain an Integrated Pest Management program in the space.					
18. Monitor **and** record gaseous **and** particulate pollution; **and** when detected, control levels of gaseous and particulate pollution to the lowest practical limits.					
19. Record visitor **and** researcher access to storage areas using a consistent system (e.g., a sign-in log).					
20. Written policies and/or procedures are used that control access to **and** govern the use of keys **and** combinations to enter the space.					
21. Written policies and/or procedures are used for opening **and** closing the space.					
22. Written policies and/or procedures are used for accessing museum property **and** museum records in the space.					
23. The appropriate combination of mechanical **and** electronic systems are used to secure the space.					
24. A written Emergency Management Plan exists for the space **and** specifically identifies the museum property located within the space **and** addressed any special needs that may exist regarding the museum property.					

25. Equipment and/or systems, appropriate to the nature of museum property and to the physical structure of the location, are installed to detect **and** suppress fire in the space.					
26. Given the nature of the structure, to the extent possible, make the space within it fire-resistant.					
27. Museum records located in the space are located in an appropriate fire- **and** burglary-resistant container **or** vault which is locked when not in use. **If no records are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
28. A written Fire Plan exists **and** contains information specific to the needs of the museum property within the space as it relates to preventing, detecting, and suppressing fire.					
29. The storing of flammable liquids is avoid within the space. **If flammable liquids or materials is present, then enter "1" in the "Yes" column, otherwise enter "1" in the "No" column.**					
30. The space is cleaned on a regular schedule.					
31. Written policies, rules, and/or procedures are used for handling museum property **and** meeting housekeeping standards within the space.					
32. Written policies, rules, and/or procedures are used to prohibit smoking, drinking, **and** eating in the space.					
33. Museum property in the space is examined regularly to detect evidence of deterioration **and** the results are documented accordingly.					
34. Conservation treatments are arranged to stabilize the condition of museum property within the space following professional conservation standards and practices.					
35. The space is large enough to accommodate the museum property that currently exists within it.					
36. The space will accommodate anticipated collection growth. **If the Unit's Management Plan and the curation agreement does not specify collection growth within this space, then enter "1" in the "DNA" column and a comment to that effect.**					
37. Dedicated storage space will be provided in all newly constructed and remodeled storage areas. **If the Unit's Management Plan and the curation agreement does not specify collection growth within this space, then enter "1" in the "DNA" column and a comment to that effect.**					
38. To the extend possible, the spaces is dedicated to the storage of only museum property.					
39. The storage space is organized in a manner to allow for the efficient use of storage equipment and techniques.					

40. The storage space is organized in a manner to allow for optimum, effective access to the museum property located within it.					
41. The museum property is kept in appropriate containers and/or equipment **and** the appropriate museum-quality materials is used for packaging. Note, records and most specimens need special containers or mounts.					
42. Materials **and** techniques are used that protect museum property from damage due to shock or vibration when storage space is located within a high-risk earthquake zones (see Seismic Risk-Zone Map of 1992 at http://pubs.usgs.gov/fs/2005/3052/). **If the space is not located with a high-risk earthquake zone, then enter "1" in the "yes" column, otherwise enter "1" in the "no" column.**					
Percentage for Storage Room	**n/a**				
Questions 43-79 relate to **EXHIBIT** Space only.					
43. Monitor **and** record temperature levels.					
44. Avoid abrupt changes in temperature.		X			
45. Maintain temperature levels within the recommended range of 21°C to 23°C (70°F to 74°F) where human comfort is a factor.		X			
46. Monitor **and** record relative humidity (RH) levels.					
47. Record RH data continuously for one year **and** evaluate the data before establishing acceptable ranges and limits.					
48. Maintain RH levels below 65% to reduce the potential for mold growth.					
49. Maintain RH levels above 35% to prevent desiccating and shrinking of organic materials (e.g., wood, paper, textiles, leather, hair, fur, feathers, horn, bone, ivory, shell, grasses, fibers, bark, lacquers, and waxes). **If no organic materials are present within the space, then enter "1" in the "DNA" column.**					
50. Establish acceptable ranges **and** limits of RH levels for space, based on the local climate, the nature and condition of the materials constituting the collection, the RH levels to which the materials have been acclimatized, the structure housing museum property, and other relevant factors; ideally, fluctuations should not exceed 3% RH per month.					
51. Maintain RH levels within an acceptable range **and** avoid extreme levels and wide fluctuations.					
52. The equipment (e.g., thermohygrometers, hygrometers, hygrothermographs, psychrometers, and data loggers) used to monitor RH **or** temperature are maintained and calibrated according to the manufacturer's recommendations. **Note, it you answered yes to either 43. or 46. above, then enter either a 'Yes' or 'No' response.**					

53. Light levels are maintained at or below 50 lux (5 foot-candles) for especially light-sensitive materials (e.g., dyed organic material, textiles, watercolors, tapestries, prints and drawings, manuscripts, dyed leather, wallpapers, natural history specimens such as botanical specimens, fur and feathers, and original photographs, including negatives, transparencies, and prints). **If no light-sensitive materials are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
54. Light levels are maintained at or below 200 lux (20 foot-candles) for undyed and untreated organic materials, oil and tempera paintings, and finished wooden surfaces; **and** when these materials are housed with other light-sensitive materials, then the light levels must be maintained at the appropriate level for the most sensitive materials. **If no museum property consisting of undyed or untreated organic materials, oil or tempera paintings, or finished wooden surfaces are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
55. Light levels do not exceed 300 lux (30 foot-candles); **and** when items of mixed sensitivity are located within the same space, then the light levels must be maintained at the appropriate level for the most sensitive item.					
56. Monitor **and** record the level of ultraviolet (UV) radiation from all sources **and** if the UV radiation level exceeds 75 microwatts per lumen, control it by installing UV-filtering material.					
57. Establish **and** maintain an Integrated Pest Management program in the space.		X			
58. Monitor **and** record gaseous **and** particulate pollution; **and** when detected, control levels of gaseous and particulate pollution to the lowest practical limits.					
59. Written policies and/or procedures are used that control access to **and** govern the use of keys and combinations to enter the space.		X			
60. Written policies and/or procedures are used for opening **and** closing the space.		X			
61. Written policies and/or procedures are used for accessing museum property **and** museum records in the space.					
62. The appropriate combination of mechanical **and** electronic systems are used to secure the space.					
63. A written Emergency Management Plan exists for the space **and** specifically identifies the museum property located within the space **and** addressed any special needs that may exist regarding the museum property.					
64. Equipment and/or systems, appropriate to the nature of museum property and to the physical structure of the location, is installed to detect **and** suppress fire in the space.					

65. Given the nature of the structure, to the extent possible, make the space within it fire-resistant.					
66. Museum records located in the space are located in an appropriate fire- **and** burglary-resistant container **or** vault which is locked when not in use. **If no records are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
67. A written Fire Plan exists **and** contains information specific to the needs of the museum property within the space as it relates to preventing, detecting, and suppressing fire.					
68. The space is cleaned on a regular schedule.		X			
69. Written policies, rules, and/or procedures are used for handling museum property **and** meeting housekeeping standards within the space.		X			
70. Written policies, rules, and/or procedures are used to prohibit smoking, drinking, **and** eating in the space.		X			
71. Museum property in the space is examined regularly to detect evidence of deterioration **and** the results are documented accordingly.					
72. Conservation treatments are arranged to stabilize the condition of museum property within the space following professional conservation standards and practices.					
73. Museum property exhibited in the space is done so in ways that minimizes risks to it.		X			
74. Consider how best to preserve, protect, and maintain museum property when planning exhibits in the space.		X			
75. Design and fabricate exhibit cases, to be placed in the space, in ways that promote security, housekeeping, **and** preservation of the museum property.		X			
76. Protect freestanding museum property within the space by using an appropriate combination of physical, electronic, **and** staffing methods. **If no freestanding museum property is present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
77. Substitute environmentally sensitive objects on a scheduled basis to minimize deterioration. **If no environmentally sensitive objects are present within the space, then enter "1" in the "DNA" column and a comment to that effect**.					
78. Use mounts constructed of museum-quality material to support objects when necessary. **If no items require mounts within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
79. Avoid exhibiting original documents, whenever possible, by using copies. **If documents are not part of the exhibit within the space, then enter “1” in the “DNA” column and a comment to that effect.**					

Percentage for Exhibit Space	**n/a**	**34%**			
Questions 80–98 relate to **Administrative Office** (DISPLAY) space only.					
80. Keys to the space **and** display cases are controlled.		X			
81. Written policies and/or procedures are used for opening **and** closing the space.					
82. Written guidance exists on how to safely evacuate museum property in the event of a disaster (e.g., storm, flood, or fire).					
83. The space is protected from unauthorized entry.		X			
84. A written Fire Plan exists **and** contains information specific to the needs of the museum property within the space as it relates to preventing, detecting, and suppressing fire.					
85. Written policies and/or procedures are used to address accessing **and** moving museum property within the space.					
86. Written policies, rules, and/or procedures are used to prohibit smoking in the space.	X	X			
87. Monitor, record, evaluate, **and** control relative humidity (RH) levels **and** temperature to the extent possible.					
88. Keep rapid fluctuations of RH levels **and** temperature to a minimum **and** avoid harmful extremes.					
89. Monitor **and** control ultraviolet (UV) radiation from all sources **and** if the UV radiation level exceeds 75 microwatts per lumen, control it by installing UV-filtering material.					
90. Monitor **and** control visible light, to the extent practical, 1) at or below 50 lux (5 foot-candles) for especially light-sensitive materials (e.g., dyed organic material, textiles, watercolors, tapestries, prints and drawings, manuscripts, dyed leather, wallpapers, natural history specimens such as botanical specimens, fur and feathers, and original photographs, including negatives, transparencies, and prints); 2) at or below 200 lux (20 foot-candles) for undyed and untreated organic materials, oil paintings and tempera paintings, and finished wooden surfaces; and 3) never exceed 300 lux (30 foot-candles) **and** when items of mixed sensitivity are exhibited together, then the light levels must be maintained at the appropriate level for the most sensitive item.					
91. Establish and maintain an Integrated Pest Management program in the space.	X	X			
92. Written policies, rules, and/or procedures are used for handling museum property and meeting housekeeping standards within the space.					

93. Properly frame and secure two-dimensional art (e.g., painting, sketch). **If no two-dimensional art is present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
94. Mat **and** protect (with glass or another appropriate material) watercolor paintings, prints, and drawings using archival-quality material. **If no water color paintings, prints or drawings are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
95. Display museum property in areas that provide protection from accidental damage.					
96. Written policies, rules, and/or procedures are used to prohibit the use of museum property for secondary functions (e.g., basket as a container for waste or plants; hammerstone as a paper weight).					
97. Textiles are displayed in a manner so that their weight is distributed evenly. **If no textiles are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
98. Prevent metals **and** untreated wood from touching textiles. **If no textiles are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
Percentage for Administrative Office	**13%**	**29%**			
	Administrative Building	**Visitor's Center**			
Overall percentage of Rooms Housing Museum Property at Crab Orchard NWR	**13%**	**33%**			

Marais des Cygnes National Wildlife Refuge Facility

411 DM Questions	Headquarters Building	36 CFR 79 Factors	Headquarters Building
Questions 1-42 relate to **STORAGE** space only.			
1. Monitor **and** record temperature levels.		Air conditioning regulation	X
2. Avoid abrupt changes in temperature.		Heat regulation	X
3. Maintain temperature levels within the recommended range of 21°C to 23°C (70°F to 74°F) where human comfort is a factor.		Humidity monitoring and regulation	
4. Temperature level for mixed collections is reduce gradually to a cooler level, avoiding condensation of moisture on cold surfaces, where human comfort is not a factor.		Janitorial Regulation	X
5. Monitor **and** record relative humidity (RH) levels.		Dust regulation (filters)	X
6. Record RH data continuously for one year **and** evaluate the data before establishing acceptable ranges and limits.		Security Detection (intrusion alarms)	
7. Maintain RH levels below 65% to reduce the potential for mold growth.		Security Deterrent (guards, TV monitors)	
8. Maintain RH levels above 35% to prevent desiccating and shrinking of organic materials (e.g., wood, paper, textiles, leather, hair, fur, feathers, horn, bone, ivory, shell, grasses, fibers, bark, lacquers, and waxes). **If no organic materials are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**		Security Deterrent (controlled access, dead-bolt locks)	X
9. Establish acceptable ranges **and** limits of RH levels for space, based on the local climate, the nature and condition of the materials constituting the collection, the RH levels to which the materials have been acclimatized, the structure housing museum property, and other relevant factors; ideally, fluctuations should not exceed 3% RH per month.		Fire Detection (wired or manual alarms)	X
10. Maintain the RH level within an acceptable range **and** avoid extreme levels **and** wide fluctuations.		Fire Suppression (Sprinkler system)	
11. The equipment (e.g., thermohygrometers, hygrometers, hygrothermographs, psychrometers, and data loggers) used to monitor RH **or** temperature are maintained and calibrated according to the manufacturer's recommendations. **Note, it you answered yes to 1. or 5. above, then enter either a 'Yes' or 'No' response.**		Fire Suppression (fire extinguishers, firewalls)	X
12. Light levels are maintained at or below 50 lux (5 foot-candles) for especially light-sensitive materials (e.g., dyed organic material, textiles, watercolors, tapestries, prints and drawings, manuscripts, dyed leather, wallpapers, natural		Pest Monitoring (routine check of storage areas)	X

history specimens such as botanical specimens, fur and feathers, and original photographs, including negatives, transparencies, and prints). **If no light-sensitive materials are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
13. Light levels are maintained at or below 200 lux (20 foot-candles) for undyed and untreated organic materials, oil and tempera paintings, and finished wooden surfaces; **and** when these materials are housed with other light-sensitive materials, then the light levels must be maintained at the appropriate level for the most sensitive materials. **If no museum property consisting of undyed or untreated organic materials, oil or tempera paintings, or finished wooden surfaces are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**		Pest Control (spraying, insect traps)	X
14. Light levels do not exceed 300 lux (30 foot-candles); **and** when items of mixed sensitivity are located within the same space, then the light levels must be maintained at the appropriate level for the most sensitive item.			
15. No light is present in the storage area, except for short durations required for access **or** housekeeping.			
16. Monitor **and** record the level of ultraviolet (UV) radiation from all sources **and** if the UV radiation level exceeds 75 microwatts per lumen, control it by installing UV-filtering material.			
17. Establish **and** maintain an Integrated Pest Management program in the space.			
18. Monitor **and** record gaseous **and** particulate pollution; **and** when detected, control levels of gaseous and particulate pollution to the lowest practical limits.			
19. Record visitor **and** researcher access to storage areas using a consistent system (e.g., a sign-in log).			
20. Written policies and/or procedures are used that control access to **and** govern the use of keys **and** combinations to enter the space.			
21. Written policies and/or procedures are used for opening **and** closing the space.			
22. Written policies and/or procedures are used for accessing museum property **and** museum records in the space.			
23. The appropriate combination of mechanical **and** electronic systems are used to secure the space.			
24. A written Emergency Management Plan exists for the space **and** specifically identifies the museum property located within the space **and** addressed any special needs that may exist regarding the museum property.			
25. Equipment and/or systems, appropriate to the nature of museum property and to the physical structure of the location, is installed to detect **and** suppress fire in the space.			
26. Given the nature of the structure, to the extent possible, make the space within			

it fire-resistant.			
27. Museum records located in the space are located in an appropriate fire- **and** burglary-resistant container **or** vault which is locked when not in use. **If no records are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
28. A written Fire Plan exists **and** contains information specific to the needs of the museum property within the space as it relates to preventing, detecting, and suppressing fire.			
29. The storing of flammable liquids is avoid within the space. **If flammable liquids or materials is present, then enter "1" in the "Yes" column, otherwise enter "1" in the "No" column.**			
30. The space is cleaned on a regular schedule.			
31. Written policies, rules, and/or procedures are used for handling museum property **and** meeting housekeeping standards within the space.			
32. Written policies, rules, and/or procedures are used to prohibit smoking, drinking, **and** eating in the space.			
33. Museum property in the space is examined regularly to detect evidence of deterioration **and** the results are documented accordingly.			
34. Conservation treatments are arranged to stabilize the condition of museum property within the space following professional conservation standards and practices.			
35. The space is large enough to accommodate the museum property that currently exists within it.			
36. The space will accommodate anticipated collection growth. **If the Unit's Management Plan and the curation agreement does not specify collection growth within this space, then enter "1" in the "DNA" column and a comment to that effect.**			
37. Dedicated storage space will be provided in all newly constructed and remodeled storage areas. **If the Unit's Management Plan and the curation agreement does not specify collection growth within this space, then enter "1" in the "DNA" column and a comment to that effect.**			
38. To the extend possible, the spaces is dedicated to the storage of only museum property.			
39. The storage space is organized in a manner to allow for the efficient use of storage equipment and techniques.			
40. The storage space is organized in a manner to allow for optimum, effective access to the museum property located within it.			
41. The museum property is kept in appropriate containers and/or equipment **and** the appropriate museum-quality materials is used for packaging. Note, records			

and most specimens need special containers or mounts.			
42. Materials **and** techniques are used that protect museum property from damage due to shock or vibration when storage space is located within a high-risk earthquake zones (see Seismic Risk-Zone Map of 1992 at http://pubs.usgs.gov/fs/2005/3052/). **If the space is not located with a high-risk earthquake zone, then enter "1" in the "yes" column, otherwise enter "1" in the "no" column.**			
Percentage for Storage Space	**n/a**		
Questions 43-79 relate to **EXHIBIT** Space only.			
43. Monitor **and** record temperature levels.			
44. Avoid abrupt changes in temperature.			
45. Maintain temperature levels within the recommended range of 21°C to 23°C (70°F to 74°F) where human comfort is a factor.			
46. Monitor **and** record relative humidity (RH) levels.			
47. Record RH data continuously for one year **and** evaluate the data before establishing acceptable ranges and limits.			
48. Maintain RH levels below 65% to reduce the potential for mold growth.			
49. Maintain RH levels above 35% to prevent desiccating and shrinking of organic materials (e.g., wood, paper, textiles, leather, hair, fur, feathers, horn, bone, ivory, shell, grasses, fibers, bark, lacquers, and waxes). **If no organic materials are present within the space, then enter "1" in the "DNA" column.**			
50. Establish acceptable ranges **and** limits of RH levels for space, based on the local climate, the nature and condition of the materials constituting the collection, the RH levels to which the materials have been acclimatized, the structure housing museum property, and other relevant factors; ideally, fluctuations should not exceed 3% RH per month.			
51. Maintain RH levels within an acceptable range **and** avoid extreme levels and wide fluctuations.			
52. The equipment (e.g., thermohygrometers, hygrometers, hygrothermographs, psychrometers, and data loggers) used to monitor RH **or** temperature are maintained and calibrated according to the manufacturer's recommendations. **Note, it you answered yes to either 43. or 46. above, then enter either a 'Yes' or 'No' response.**			
53. Light levels are maintained at or below 50 lux (5 foot-candles) for especially light-sensitive materials (e.g., dyed organic material, textiles, watercolors, tapestries, prints and drawings, manuscripts, dyed leather, wallpapers, natural history specimens such as botanical specimens, fur and feathers, and original photographs, including negatives, transparencies, and prints). **If no light-sensitive materials are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			

54. Light levels are maintained at or below 200 lux (20 foot-candles) for undyed and untreated organic materials, oil and tempera paintings, and finished wooden surfaces; **and** when these materials are housed with other light-sensitive materials, then the light levels must be maintained at the appropriate level for the most sensitive materials. **If no museum property consisting of undyed or untreated organic materials, oil or tempera paintings, or finished wooden surfaces are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
55. Light levels do not exceed 300 lux (30 foot-candles); **and** when items of mixed sensitivity are located within the same space, then the light levels must be maintained at the appropriate level for the most sensitive item.			
56. Monitor **and** record the level of ultraviolet (UV) radiation from all sources **and** if the UV radiation level exceeds 75 microwatts per lumen, control it by installing UV-filtering material.			
57. Establish **and** maintain an Integrated Pest Management program in the space.			
58. Monitor **and** record gaseous **and** particulate pollution; **and** when detected, control levels of gaseous and particulate pollution to the lowest practical limits.			
59. Written policies and/or procedures are used that control access to **and** govern the use of keys and combinations to enter the space.			
60. Written policies and/or procedures are used for opening **and** closing the space.			
61. Written policies and/or procedures are used for accessing museum property **and** museum records in the space.			
62. The appropriate combination of mechanical **and** electronic systems are used to secure the space.			
63. A written Emergency Management Plan exists for the space **and** specifically identifies the museum property located within the space **and** addressed any special needs that may exist regarding the museum property.			
64. Equipment and/or systems, appropriate to the nature of museum property and to the physical structure of the location, is installed to detect **and** suppress fire in the space.			
65. Given the nature of the structure, to the extent possible, make the space within it fire-resistant.			
66. Museum records located in the space are located in an appropriate fire- **and** burglary-resistant container **or** vault which is locked when not in use. **If no records are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
67. A written Fire Plan exists **and** contains information specific to the needs of the museum property within the space as it relates to preventing, detecting, and suppressing fire.			
68. The space is cleaned on a regular schedule.			

69. Written policies, rules, and/or procedures are used for handling museum property **and** meeting housekeeping standards within the space.			
70. Written policies, rules, and/or procedures are used to prohibit smoking, drinking, **and** eating in the space.			
71. Museum property in the space is examined regularly to detect evidence of deterioration **and** the results are documented accordingly.			
72. Conservation treatments are arranged to stabilize the condition of museum property within the space following professional conservation standards and practices.			
73. Museum property exhibited in the space is done so in ways that minimizes risks to it.			
74. Consider how best to preserve, protect, and maintain museum property when planning exhibits in the space.			
75. Design and fabricate exhibit cases, to be placed in the space, in ways that promote security, housekeeping, **and** preservation of the museum property.			
76. Protect freestanding museum property within the space by using an appropriate combination of physical, electronic, **and** staffing methods. **If no freestanding museum property is present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
77. Substitute environmentally sensitive objects on a scheduled basis to minimize deterioration. **If no environmentally sensitive objects are present within the space, then enter "1" in the "DNA" column and a comment to that effect**.			
78. Use mounts constructed of museum-quality material to support objects when necessary. **If no items require mounts within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
79. Avoid exhibiting original documents, whenever possible, by using copies. **If documents are not part of the exhibit within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
Percentage for Exhibit Space	**n/a**		
Questions 80–98 relate to **Administrative Office** (DISPLAY) space only.			
80. Keys to the space **and** display cases are controlled.	X		
81. Written policies and/or procedures are used for opening **and** closing the space.			
82. Written guidance exists on how to safely evacuate museum property in the event of a disaster (e.g., storm, flood, or fire).			
83. The space is protected from unauthorized entry.	X		
84. A written Fire Plan exists **and** contains information specific to the needs of the museum property within the space as it relates to preventing, detecting, and suppressing fire.			
85. Written policies and/or procedures are used to address accessing **and** moving			

museum property within the space.			
86. Written policies, rules, and/or procedures are used to prohibit smoking in the space.	X		
87. Monitor, record, evaluate, **and** control relative humidity (RH) levels **and** temperature to the extent possible.			
88. Keep rapid fluctuations of RH levels **and** temperature to a minimum **and** avoid harmful extremes.			
89. Monitor **and** control ultraviolet (UV) radiation from all sources **and** if the UV radiation level exceeds 75 microwatts per lumen, control it by installing UV-filtering material.			
90. Monitor **and** control visible light, to the extent practical, 1) at or below 50 lux (5 foot-candles) for especially light-sensitive materials (e.g., dyed organic material, textiles, watercolors, tapestries, prints and drawings, manuscripts, dyed leather, wallpapers, natural history specimens such as botanical specimens, fur and feathers, and original photographs, including negatives, transparencies, and prints); 2) at or below 200 lux (20 foot-candles) for undyed and untreated organic materials, oil paintings and tempera paintings, and finished wooden surfaces; and 3) never exceed 300 lux (30 foot-candles) **and** when items of mixed sensitivity are exhibited together, then the light levels must be maintained at the appropriate level for the most sensitive item.			
91. Establish and maintain an Integrated Pest Management program in the space.	X		
92. Written policies, rules, and/or procedures are used for handling museum property and meeting housekeeping standards within the space.			
93. Properly frame and secure two-dimensional art (e.g., painting, sketch). **If no two-dimensional art is present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
94. Mat **and** protect (with glass or another appropriate material) watercolor paintings, prints, and drawings using archival-quality material. **If no water color paintings, prints or drawings are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
95. Display museum property in areas that provide protection from accidental damage.	X		
96. Written policies, rules, and/or procedures are used to prohibit the use of museum property for secondary functions (e.g., basket as a container for waste or plants; hammerstone as a paper weight).			
97. Textiles are displayed in a manner so that their weight is distributed evenly. **If no textiles are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
98. Prevent metals **and** untreated wood from touching textiles. **If no textiles are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			

Percentage for Administrative Office	**33%**		
	Headquarters Building		
Overall percentage of Rooms Housing Museum Property at Marais des Cygnes NWR	**33%**		

Mingo National Wildlife Refuge Facility

411 DM Questions	Visitor's Center	36 CFR 79 Factors	Visitor's Center
Questions 1-42 relate to **STORAGE** space only.			
1. Monitor **and** record temperature levels.		Air conditioning regulation	X
2. Avoid abrupt changes in temperature.		Heat regulation	X
3. Maintain temperature levels within the recommended range of 21°C to 23°C (70°F to 74°F) where human comfort is a factor.		Humidity monitoring and regulation	
4. Temperature level for mixed collections is reduce gradually to a cooler level, avoiding condensation of moisture on cold surfaces, where human comfort is not a factor.		Janitorial Regulation	X
5. Monitor **and** record relative humidity (RH) levels.		Dust regulation (filters)	
6. Record RH data continuously for one year **and** evaluate the data before establishing acceptable ranges and limits.		Security Detection (intrusion alarms)	
7. Maintain RH levels below 65% to reduce the potential for mold growth.		Security Deterrent (guards, TV monitors)	
8. Maintain RH levels above 35% to prevent desiccating and shrinking of organic materials (e.g., wood, paper, textiles, leather, hair, fur, feathers, horn, bone, ivory, shell, grasses, fibers, bark, lacquers, and waxes). **If no organic materials are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**		Security Deterrent (controlled access, dead-bolt locks)	X
9. Establish acceptable ranges **and** limits of RH levels for space, based on the local climate, the nature and condition of the materials constituting the collection, the RH levels to which the materials have been acclimatized, the structure housing museum property, and other relevant factors; ideally, fluctuations should not exceed 3% RH per month.		Fire Detection (wired or manual alarms)	X
10. Maintain the RH level within an acceptable range **and** avoid extreme levels **and** wide fluctuations.		Fire Suppression (Sprinkler system)	
11. The equipment (e.g., thermohygrometers, hygrometers, hygrothermographs, psychrometers, and data loggers) used to monitor RH **or** temperature are maintained and calibrated according to the manufacturer's recommendations. **Note, it you answered yes to 1. or 5. above, then enter either a 'Yes' or 'No' response.**		Fire Suppression (fire extinguishers, firewalls)	X
12. Light levels are maintained at or below 50 lux (5 foot-candles) for especially light-sensitive materials (e.g., dyed organic material, textiles, watercolors, tapestries, prints and drawings, manuscripts, dyed leather, wallpapers, natural history specimens such as botanical specimens, fur and feathers, and original		Pest Monitoring (routine check of storage areas)	X

photographs, including negatives, transparencies, and prints). **If no light-sensitive materials are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
13. Light levels are maintained at or below 200 lux (20 foot-candles) for undyed and untreated organic materials, oil and tempera paintings, and finished wooden surfaces; **and** when these materials are housed with other light-sensitive materials, then the light levels must be maintained at the appropriate level for the most sensitive materials. **If no museum property consisting of undyed or untreated organic materials, oil or tempera paintings, or finished wooden surfaces are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**		Pest Control (spraying, insect traps)	X
14. Light levels do not exceed 300 lux (30 foot-candles); **and** when items of mixed sensitivity are located within the same space, then the light levels must be maintained at the appropriate level for the most sensitive item.			
15. No light is present in the storage area, except for short durations required for access **or** housekeeping.			
16. Monitor **and** record the level of ultraviolet (UV) radiation from all sources **and** if the UV radiation level exceeds 75 microwatts per lumen, control it by installing UV-filtering material.			
17. Establish **and** maintain an Integrated Pest Management program in the space.			
18. Monitor **and** record gaseous **and** particulate pollution; **and** when detected, control levels of gaseous and particulate pollution to the lowest practical limits.			
19. Record visitor **and** researcher access to storage areas using a consistent system (e.g., a sign-in log).			
20. Written policies and/or procedures are used that control access to **and** govern the use of keys **and** combinations to enter the space.			
21. Written policies and/or procedures are used for opening **and** closing the space.			
22. Written policies and/or procedures are used for accessing museum property **and** museum records in the space.			
23. The appropriate combination of mechanical **and** electronic systems are used to secure the space.			
24. A written Emergency Management Plan exists for the space **and** specifically identifies the museum property located within the space **and** addressed any special needs that may exist regarding the museum property.			
25. Equipment and/or systems, appropriate to the nature of museum property and to the physical structure of the location, is installed to detect **and** suppress fire in the space.			
26. Given the nature of the structure, to the extent possible, make the space within it fire-resistant.			

27. Museum records located in the space are located in an appropriate fire- **and** burglary-resistant container **or** vault which is locked when not in use. **If no records are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
28. A written Fire Plan exists **and** contains information specific to the needs of the museum property within the space as it relates to preventing, detecting, and suppressing fire.			
29. The storing of flammable liquids is avoid within the space. **If flammable liquids or materials is present, then enter "1" in the "Yes" column, otherwise enter "1" in the "No" column.**			
30. The space is cleaned on a regular schedule.			
31. Written policies, rules, and/or procedures are used for handling museum property **and** meeting housekeeping standards within the space.			
32. Written policies, rules, and/or procedures are used to prohibit smoking, drinking, **and** eating in the space.			
33. Museum property in the space is examined regularly to detect evidence of deterioration **and** the results are documented accordingly.			
34. Conservation treatments are arranged to stabilize the condition of museum property within the space following professional conservation standards and practices.			
35. The space is large enough to accommodate the museum property that currently exists within it.			
36. The space will accommodate anticipated collection growth. **If the Unit's Management Plan and the curation agreement does not specify collection growth within this space, then enter "1" in the "DNA" column and a comment to that effect.**			
37. Dedicated storage space will be provided in all newly constructed and remodeled storage areas. **If the Unit's Management Plan and the curation agreement does not specify collection growth within this space, then enter "1" in the "DNA" column and a comment to that effect.**			
38. To the extend possible, the spaces is dedicated to the storage of only museum property.			
39. The storage space is organized in a manner to allow for the efficient use of storage equipment and techniques.			
40. The storage space is organized in a manner to allow for optimum, effective access to the museum property located within it.			
41. The museum property is kept in appropriate containers and/or equipment **and** the appropriate museum-quality materials is used for packaging. Note, records and most specimens need special containers or mounts.			

42. Materials **and** techniques are used that protect museum property from damage due to shock or vibration when storage space is located within a high-risk earthquake zones (see Seismic Risk-Zone Map of 1992 at http://pubs.usgs.gov/fs/2005/3052/). **If the space is not located with a high-risk earthquake zone, then enter "1" in the "yes" column, otherwise enter "1" in the "no" column.**			
Percentage for Storage Space	**n/a**		
Questions 43-79 relate to **EXHIBIT** Space only.			
43. Monitor **and** record temperature levels.			
44. Avoid abrupt changes in temperature.	X		
45. Maintain temperature levels within the recommended range of 21°C to 23°C (70°F to 74°F) where human comfort is a factor.	X		
46. Monitor **and** record relative humidity (RH) levels.			
47. Record RH data continuously for one year **and** evaluate the data before establishing acceptable ranges and limits.			
48. Maintain RH levels below 65% to reduce the potential for mold growth.			
49. Maintain RH levels above 35% to prevent desiccating and shrinking of organic materials (e.g., wood, paper, textiles, leather, hair, fur, feathers, horn, bone, ivory, shell, grasses, fibers, bark, lacquers, and waxes). **If no organic materials are present within the space, then enter "1" in the "DNA" column.**			
50. Establish acceptable ranges **and** limits of RH levels for space, based on the local climate, the nature and condition of the materials constituting the collection, the RH levels to which the materials have been acclimatized, the structure housing museum property, and other relevant factors; ideally, fluctuations should not exceed 3% RH per month.			
51. Maintain RH levels within an acceptable range **and** avoid extreme levels and wide fluctuations.			
52. The equipment (e.g., thermohygrometers, hygrometers, hygrothermographs, psychrometers, and data loggers) used to monitor RH **or** temperature are maintained and calibrated according to the manufacturer's recommendations. **Note, it you answered yes to either 43. or 46. above, then enter either a 'Yes' or 'No' response.**			
53. Light levels are maintained at or below 50 lux (5 foot-candles) for especially light-sensitive materials (e.g., dyed organic material, textiles, watercolors, tapestries, prints and drawings, manuscripts, dyed leather, wallpapers, natural history specimens such as botanical specimens, fur and feathers, and original photographs, including negatives, transparencies, and prints). **If no light-sensitive materials are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			

54. Light levels are maintained at or below 200 lux (20 foot-candles) for undyed and untreated organic materials, oil and tempera paintings, and finished wooden surfaces; **and** when these materials are housed with other light-sensitive materials, then the light levels must be maintained at the appropriate level for the most sensitive materials. **If no museum property consisting of undyed or untreated organic materials, oil or tempera paintings, or finished wooden surfaces are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
55. Light levels do not exceed 300 lux (30 foot-candles); **and** when items of mixed sensitivity are located within the same space, then the light levels must be maintained at the appropriate level for the most sensitive item.			
56. Monitor **and** record the level of ultraviolet (UV) radiation from all sources **and** if the UV radiation level exceeds 75 microwatts per lumen, control it by installing UV-filtering material.			
57. Establish **and** maintain an Integrated Pest Management program in the space.	X		
58. Monitor **and** record gaseous **and** particulate pollution; **and** when detected, control levels of gaseous and particulate pollution to the lowest practical limits.			
59. Written policies and/or procedures are used that control access to **and** govern the use of keys and combinations to enter the space.	X		
60. Written policies and/or procedures are used for opening **and** closing the space.	X		
61. Written policies and/or procedures are used for accessing museum property **and** museum records in the space.			
62. The appropriate combination of mechanical **and** electronic systems are used to secure the space.			
63. A written Emergency Management Plan exists for the space **and** specifically identifies the museum property located within the space **and** addressed any special needs that may exist regarding the museum property.			
64. Equipment and/or systems, appropriate to the nature of museum property and to the physical structure of the location, is installed to detect **and** suppress fire in the space.			
65. Given the nature of the structure, to the extent possible, make the space within it fire-resistant.			
66. Museum records located in the space are located in an appropriate fire- **and** burglary-resistant container **or** vault which is locked when not in use. **If no records are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
67. A written Fire Plan exists **and** contains information specific to the needs of the museum property within the space as it relates to preventing, detecting, and suppressing fire.			
68. The space is cleaned on a regular schedule.	X		

69. Written policies, rules, and/or procedures are used for handling museum property **and** meeting housekeeping standards within the space.	X		
70. Written policies, rules, and/or procedures are used to prohibit smoking, drinking, **and** eating in the space.	X		
71. Museum property in the space is examined regularly to detect evidence of deterioration **and** the results are documented accordingly.			
72. Conservation treatments are arranged to stabilize the condition of museum property within the space following professional conservation standards and practices.			
73. Museum property exhibited in the space is done so in ways that minimizes risks to it.	X		
74. Consider how best to preserve, protect, and maintain museum property when planning exhibits in the space.	X		
75. Design and fabricate exhibit cases, to be placed in the space, in ways that promote security, housekeeping, **and** preservation of the museum property.	X		
76. Protect freestanding museum property within the space by using an appropriate combination of physical, electronic, **and** staffing methods. **If no freestanding museum property is present within the space, then enter "1" in the "DNA" column and a comment to that effect.**	X		
77. Substitute environmentally sensitive objects on a scheduled basis to minimize deterioration. **If no environmentally sensitive objects are present within the space, then enter "1" in the "DNA" column and a comment to that effect**.			
78. Use mounts constructed of museum-quality material to support objects when necessary. **If no items require mounts within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
79. Avoid exhibiting original documents, whenever possible, by using copies. **If documents are not part of the exhibit within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
Percentage for Exhibit Space	**38%**		
Questions 80–98 relate to **Administrative Office** (DISPLAY) space only.			
80. Keys to the space **and** display cases are controlled.	X		
81. Written policies and/or procedures are used for opening **and** closing the space.			
82. Written guidance exists on how to safely evacuate museum property in the event of a disaster (e.g., storm, flood, or fire).			
83. The space is protected from unauthorized entry.	X		
84. A written Fire Plan exists **and** contains information specific to the needs of the museum property within the space as it relates to preventing, detecting, and suppressing fire.			

85. Written policies and/or procedures are used to address accessing **and** moving museum property within the space.			
86. Written policies, rules, and/or procedures are used to prohibit smoking in the space.	X		
87. Monitor, record, evaluate, **and** control relative humidity (RH) levels **and** temperature to the extent possible.			
88. Keep rapid fluctuations of RH levels **and** temperature to a minimum **and** avoid harmful extremes.	X		
89. Monitor **and** control ultraviolet (UV) radiation from all sources **and** if the UV radiation level exceeds 75 microwatts per lumen, control it by installing UV-filtering material.			
90. Monitor **and** control visible light, to the extent practical, 1) at or below 50 lux (5 foot-candles) for especially light-sensitive materials (e.g., dyed organic material, textiles, watercolors, tapestries, prints and drawings, manuscripts, dyed leather, wallpapers, natural history specimens such as botanical specimens, fur and feathers, and original photographs, including negatives, transparencies, and prints); 2) at or below 200 lux (20 foot-candles) for undyed and untreated organic materials, oil paintings and tempera paintings, and finished wooden surfaces; and 3) never exceed 300 lux (30 foot-candles) **and** when items of mixed sensitivity are exhibited together, then the light levels must be maintained at the appropriate level for the most sensitive item.			
91. Establish and maintain an Integrated Pest Management program in the space.	X		
92. Written policies, rules, and/or procedures are used for handling museum property and meeting housekeeping standards within the space.	X		
93. Properly frame and secure two-dimensional art (e.g., painting, sketch). **If no two-dimensional art is present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
94. Mat **and** protect (with glass or another appropriate material) watercolor paintings, prints, and drawings using archival-quality material. **If no water color paintings, prints or drawings are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
95. Display museum property in areas that provide protection from accidental damage.			
96. Written policies, rules, and/or procedures are used to prohibit the use of museum property for secondary functions (e.g., basket as a container for waste or plants; hammerstone as a paper weight).			
97. Textiles are displayed in a manner so that their weight is distributed evenly. **If no textiles are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			

98. Prevent metals **and** untreated wood from touching textiles. **If no textiles are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
Percentage for Administrative Office	**43%**		
	Visitor's Center		
Overall percentage of Rooms Housing Museum Property at Mingo NWR	**39%**		

Ft. Niobrara National Wildlife Refuge Facilities

411 DM Questions	Visitor Center	Old Museum Building	36 CFR 79 Factors	Visitor Center	Old Museum Building
Questions 1-42 relate to **STORAGE** space only.					
1. Monitor **and** record temperature levels.			Air conditioning regulation	X	
2. Avoid abrupt changes in temperature.			Heat regulation	X	
3. Maintain temperature levels within the recommended range of 21°C to 23°C (70°F to 74°F) where human comfort is a factor.			Humidity monitoring and regulation		
4. Temperature level for mixed collections is reduce gradually to a cooler level, avoiding condensation of moisture on cold surfaces, where human comfort is not a factor.			Janitorial Regulation	X	
5. Monitor **and** record relative humidity (RH) levels.			Dust regulation (filters)		
6. Record RH data continuously for one year **and** evaluate the data before establishing acceptable ranges and limits.			Security Detection (intrusion alarms)		
7. Maintain RH levels below 65% to reduce the potential for mold growth.			Security Deterrent (guards, TV monitors)		
8. Maintain RH levels above 35% to prevent desiccating and shrinking of organic materials (e.g., wood, paper, textiles, leather, hair, fur, feathers, horn, bone, ivory, shell, grasses, fibers, bark, lacquers, and waxes). **If no organic materials are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			Security Deterrent (controlled access, dead-bolt locks)	X	X
9. Establish acceptable ranges **and** limits of RH levels for space, based on the local climate, the nature and condition of the materials constituting the collection, the RH levels to which the materials have been acclimatized, the structure housing museum property, and other relevant factors; ideally, fluctuations should not exceed 3% RH per month.			Fire Detection (wired or manual alarms)	X	
10. Maintain the RH level within an acceptable range **and** avoid extreme levels **and** wide fluctuations.			Fire Suppression (Sprinkler system)		
11. The equipment (e.g., thermohygrometers, hygrometers, hygrothermographs, psychrometers, and data loggers) used to monitor RH **or** temperature are maintained and calibrated according to the manufacturer's recommendations. **Note, it you answered yes to 1. or 5. above, then enter either a 'Yes' or 'No' response.**			Fire Suppression (fire extinguishers, firewalls)	X	X
12. Light levels are maintained at or below 50 lux (5 foot-candles) for especially light-sensitive materials (e.g., dyed organic material, textiles, watercolors, tapestries, prints and drawings, manuscripts, dyed leather, wallpapers, natural history specimens such as botanical specimens, fur and feathers, and original photographs,			Pest Monitoring (routine check of storage areas)	X	

including negatives, transparencies, and prints). **If no light-sensitive materials are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
13. Light levels are maintained at or below 200 lux (20 foot-candles) for undyed and untreated organic materials, oil and tempera paintings, and finished wooden surfaces; **and** when these materials are housed with other light-sensitive materials, then the light levels must be maintained at the appropriate level for the most sensitive materials. **If no museum property consisting of undyed or untreated organic materials, oil or tempera paintings, or finished wooden surfaces are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			Pest Control (spraying, insect traps)		
14. Light levels do not exceed 300 lux (30 foot-candles); **and** when items of mixed sensitivity are located within the same space, then the light levels must be maintained at the appropriate level for the most sensitive item.					
15. No light is present in the storage area, except for short durations required for access **or** housekeeping.					
16. Monitor **and** record the level of ultraviolet (UV) radiation from all sources **and** if the UV radiation level exceeds 75 microwatts per lumen, control it by installing UV-filtering material.					
17. Establish **and** maintain an Integrated Pest Management program in the space.					
18. Monitor **and** record gaseous **and** particulate pollution; **and** when detected, control levels of gaseous and particulate pollution to the lowest practical limits.					
19. Record visitor **and** researcher access to storage areas using a consistent system (e.g., a sign-in log).					
20. Written policies and/or procedures are used that control access to **and** govern the use of keys **and** combinations to enter the space.					
21. Written policies and/or procedures are used for opening **and** closing the space.					
22. Written policies and/or procedures are used for accessing museum property **and** museum records in the space.					
23. The appropriate combination of mechanical **and** electronic systems are used to secure the space.					
24. A written Emergency Management Plan exists for the space **and** specifically identifies the museum property located within the space **and** addressed any special needs that may exist regarding the museum property.					
25. Equipment and/or systems, appropriate to the nature of museum property and to the physical structure of the location, is installed to detect **and** suppress fire in the space.					
26. Given the nature of the structure, to the extent possible, make the space within it fire-resistant.					

27. Museum records located in the space are located in an appropriate fire- **and** burglary-resistant container **or** vault which is locked when not in use. **If no records are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
28. A written Fire Plan exists **and** contains information specific to the needs of the museum property within the space as it relates to preventing, detecting, and suppressing fire.					
29. The storing of flammable liquids is avoid within the space. **If flammable liquids or materials is present, then enter "1" in the "Yes" column, otherwise enter "1" in the "No" column.**					
30. The space is cleaned on a regular schedule.					
31. Written policies, rules, and/or procedures are used for handling museum property **and** meeting housekeeping standards within the space.					
32. Written policies, rules, and/or procedures are used to prohibit smoking, drinking, **and** eating in the space.					
33. Museum property in the space is examined regularly to detect evidence of deterioration **and** the results are documented accordingly.					
34. Conservation treatments are arranged to stabilize the condition of museum property within the space following professional conservation standards and practices.					
35. The space is large enough to accommodate the museum property that currently exists within it.					
36. The space will accommodate anticipated collection growth. **If the Unit's Management Plan and the curation agreement does not specify collection growth within this space, then enter "1" in the "DNA" column and a comment to that effect.**					
37. Dedicated storage space will be provided in all newly constructed and remodeled storage areas. **If the Unit's Management Plan and the curation agreement does not specify collection growth within this space, then enter "1" in the "DNA" column and a comment to that effect.**					
38. To the extend possible, the spaces is dedicated to the storage of only museum property.					
39. The storage space is organized in a manner to allow for the efficient use of storage equipment and techniques.					
40. The storage space is organized in a manner to allow for optimum, effective access to the museum property located within it.					
41. The museum property is kept in appropriate containers and/or equipment **and** the appropriate museum-quality materials is used for packaging. Note, records and most specimens need special containers or mounts.					

42. Materials **and** techniques are used that protect museum property from damage due to shock or vibration when storage space is located within a high-risk earthquake zones (see Seismic Risk-Zone Map of 1992 at http://pubs.usgs.gov/fs/2005/3052/). **If the space is not located with a high-risk earthquake zone, then enter "1" in the "yes" column, otherwise enter "1" in the "no" column.**					
Percentage for Storage Room	**n/a**				
Questions 43-79 relate to **EXHIBIT** Space only.					
43. Monitor **and** record temperature levels.					
44. Avoid abrupt changes in temperature.	X				
45. Maintain temperature levels within the recommended range of 21°C to 23°C (70°F to 74°F) where human comfort is a factor.	X				
46. Monitor **and** record relative humidity (RH) levels.					
47. Record RH data continuously for one year **and** evaluate the data before establishing acceptable ranges and limits.					
48. Maintain RH levels below 65% to reduce the potential for mold growth.	X				
49. Maintain RH levels above 35% to prevent desiccating and shrinking of organic materials (e.g., wood, paper, textiles, leather, hair, fur, feathers, horn, bone, ivory, shell, grasses, fibers, bark, lacquers, and waxes). **If no organic materials are present within the space, then enter "1" in the "DNA" column.**					
50. Establish acceptable ranges **and** limits of RH levels for space, based on the local climate, the nature and condition of the materials constituting the collection, the RH levels to which the materials have been acclimatized, the structure housing museum property, and other relevant factors; ideally, fluctuations should not exceed 3% RH per month.					
51. Maintain RH levels within an acceptable range **and** avoid extreme levels and wide fluctuations.					
52. The equipment (e.g., thermohygrometers, hygrometers, hygrothermographs, psychrometers, and data loggers) used to monitor RH **or** temperature are maintained and calibrated according to the manufacturer's recommendations. **Note, it you answered yes to either 43. or 46. above, then enter either a 'Yes' or 'No' response.**					
53. Light levels are maintained at or below 50 lux (5 foot-candles) for especially light-sensitive materials (e.g., dyed organic material, textiles, watercolors, tapestries, prints and drawings, manuscripts, dyed leather, wallpapers, natural history specimens such as botanical specimens, fur and feathers, and original photographs, including negatives, transparencies, and prints). **If no light-sensitive materials are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					

54. Light levels are maintained at or below 200 lux (20 foot-candles) for undyed and untreated organic materials, oil and tempera paintings, and finished wooden surfaces; **and** when these materials are housed with other light-sensitive materials, then the light levels must be maintained at the appropriate level for the most sensitive materials. **If no museum property consisting of undyed or untreated organic materials, oil or tempera paintings, or finished wooden surfaces are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
55. Light levels do not exceed 300 lux (30 foot-candles); **and** when items of mixed sensitivity are located within the same space, then the light levels must be maintained at the appropriate level for the most sensitive item.					
56. Monitor **and** record the level of ultraviolet (UV) radiation from all sources **and** if the UV radiation level exceeds 75 microwatts per lumen, control it by installing UV-filtering material.					
57. Establish **and** maintain an Integrated Pest Management program in the space.					
58. Monitor **and** record gaseous **and** particulate pollution; **and** when detected, control levels of gaseous and particulate pollution to the lowest practical limits.					
59. Written policies and/or procedures are used that control access to **and** govern the use of keys and combinations to enter the space.	X				
60. Written policies and/or procedures are used for opening **and** closing the space.	X				
61. Written policies and/or procedures are used for accessing museum property **and** museum records in the space.					
62. The appropriate combination of mechanical **and** electronic systems are used to secure the space.					
63. A written Emergency Management Plan exists for the space **and** specifically identifies the museum property located within the space **and** addressed any special needs that may exist regarding the museum property.					
64. Equipment and/or systems, appropriate to the nature of museum property and to the physical structure of the location, is installed to detect **and** suppress fire in the space.					
65. Given the nature of the structure, to the extent possible, make the space within it fire-resistant.					
66. Museum records located in the space are located in an appropriate fire- **and** burglary-resistant container **or** vault which is locked when not in use. **If no records are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
67. A written Fire Plan exists **and** contains information specific to the needs of the museum property within the space as it relates to preventing, detecting, and suppressing fire.					
68. The space is cleaned on a regular schedule.	X				

69. Written policies, rules, and/or procedures are used for handling museum property **and** meeting housekeeping standards within the space.	X				
70. Written policies, rules, and/or procedures are used to prohibit smoking, drinking, **and** eating in the space.	X				
71. Museum property in the space is examined regularly to detect evidence of deterioration **and** the results are documented accordingly.					
72. Conservation treatments are arranged to stabilize the condition of museum property within the space following professional conservation standards and practices.					
73. Museum property exhibited in the space is done so in ways that minimizes risks to it.	X				
74. Consider how best to preserve, protect, and maintain museum property when planning exhibits in the space.	X				
75. Design and fabricate exhibit cases, to be placed in the space, in ways that promote security, housekeeping, **and** preservation of the museum property.	X				
76. Protect freestanding museum property within the space by using an appropriate combination of physical, electronic, **and** staffing methods. **If no freestanding museum property is present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
77. Substitute environmentally sensitive objects on a scheduled basis to minimize deterioration. **If no environmentally sensitive objects are present within the space, then enter "1" in the "DNA" column and a comment to that effect**.					
78. Use mounts constructed of museum-quality material to support objects when necessary. **If no items require mounts within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
79. Avoid exhibiting original documents, whenever possible, by using copies. **If documents are not part of the exhibit within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
Percentage for Exhibit Space	**33%**				
Questions 80–98 relate to **Administrative Office** (DISPLAY) space only.					
80. Keys to the space **and** display cases are controlled.	X	X			
81. Written policies and/or procedures are used for opening **and** closing the space.					
82. Written guidance exist on how to safely evacuate museum property in the event of a disaster (e.g., storm, flood, or fire).					
83. The space is protected from unauthorized entry.	X	X			
84. A written Fire Plan exists **and** contains information specific to the needs of the museum property within the space as it relates to preventing, detecting, and suppressing fire.					

85. Written policies and/or procedures are used to address accessing **and** moving museum property within the space.					
86. Written policies, rules, and/or procedures are used to prohibit smoking in the space.	X				
87. Monitor, record, evaluate, **and** control relative humidity (RH) levels **and** temperature to the extent possible.					
88. Keep rapid fluctuations of RH levels **and** temperature to a minimum **and** avoid harmful extremes.	X				
89. Monitor **and** control ultraviolet (UV) radiation from all sources **and** if the UV radiation level exceeds 75 microwatts per lumen, control it by installing UV-filtering material.					
90. Monitor **and** control visible light, to the extent practical, 1) at or below 50 lux (5 foot-candles) for especially light-sensitive materials (e.g., dyed organic material, textiles, watercolors, tapestries, prints and drawings, manuscripts, dyed leather, wallpapers, natural history specimens such as botanical specimens, fur and feathers, and original photographs, including negatives, transparencies, and prints); 2) at or below 200 lux (20 foot-candles) for undyed and untreated organic materials, oil paintings and tempera paintings, and finished wooden surfaces; and 3) never exceed 300 lux (30 foot-candles) **and** when items of mixed sensitivity are exhibited together, then the light levels must be maintained at the appropriate level for the most sensitive item.					
91. Establish and maintain an Integrated Pest Management program in the space.					
92. Written policies, rules, and/or procedures are used for handling museum property and meeting housekeeping standards within the space.					
93. Properly frame and secure two-dimensional art (e.g., painting, sketch). **If no two-dimensional art is present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
94. Mat **and** protect (with glass or another appropriate material) watercolor paintings, prints, and drawings using archival-quality material. **If no water color paintings, prints or drawings are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
95. Display museum property in areas that provide protection from accidental damage.					
96. Written policies, rules, and/or procedures are used to prohibit the use of museum property for secondary functions (e.g., basket as a container for waste or plants; hammerstone as a paper weight).					
97. Textiles are displayed in a manner so that their weight is distributed evenly. **If no textiles are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					

98. Prevent metals **and** untreated wood from touching textiles. **If no textiles are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**					
Percentage for Administrative Office	**27%**	**13%**			
	Visitor's Center	**Old Museum Building**			
Overall percentage of Rooms Housing Museum Property at Ft. Niobrara NWR	**31%**	**13%**			

Arrowwood National Wildlife Refuge Facilities

411 DM Questions	Headquarters' Building	Bunkhouse	Garage	36 CFR 79 Factors	Headquarters' Building	Bunkhouse	Garage
Questions 1-42 relate to **STORAGE** space only.							
1. Monitor **and** record temperature levels.				Air conditioning regulation	X		
2. Avoid abrupt changes in temperature.				Heat regulation	X		
3. Maintain temperature levels within the recommended range of 21°C to 23°C (70°F to 74°F) where human comfort is a factor.				Humidity monitoring and regulation	X		
4. Temperature level for mixed collections is reduce gradually to a cooler level, avoiding condensation of moisture on cold surfaces, where human comfort is not a factor.				Janitorial Regulation	X		
5. Monitor **and** record relative humidity (RH) levels.				Dust regulation (filters)	X		
6. Record RH data continuously for one year **and** evaluate the data before establishing acceptable ranges and limits.				Security Detection (intrusion alarms)			
7. Maintain RH levels below 65% to reduce the potential for mold growth.				Security Deterrent (guards, TV monitors)			
8. Maintain RH levels above 35% to prevent desiccating and shrinking of organic materials (e.g., wood, paper, textiles, leather, hair, fur, feathers, horn, bone, ivory, shell, grasses, fibers, bark, lacquers, and waxes). **If no organic materials are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**				Security Deterrent (controlled access, dead-bolt locks)	X		X
9. Establish acceptable ranges **and** limits of RH levels for space, based on the local climate, the nature and condition of the materials constituting the collection, the RH levels to which the materials have been acclimatized, the structure housing museum property, and other relevant factors; ideally, fluctuations should not exceed 3% RH per month.				Fire Detection (wired or manual alarms)	X		
10. Maintain the RH level within an acceptable range **and** avoid extreme levels **and** wide fluctuations.				Fire Suppression (Sprinkler system)			

11. The equipment (e.g., thermohygrometers, hygrometers, hygrothermographs, psychrometers, and data loggers) used to monitor RH **or** temperature are maintained and calibrated according to the manufacturer's recommendations. **Note, it you answered yes to 1. or 5. above, then enter either a 'Yes' or 'No' response.**				Fire Suppression (fire extinguishers, firewalls)	x	X	X
12. Light levels are maintained at or below 50 lux (5 foot-candles) for especially light-sensitive materials (e.g., dyed organic material, textiles, watercolors, tapestries, prints and drawings, manuscripts, dyed leather, wallpapers, natural history specimens such as botanical specimens, fur and feathers, and original photographs, including negatives, transparencies, and prints). **If no light-sensitive materials are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**				Pest Monitoring (routine check of storage areas)	X		
13. Light levels are maintained at or below 200 lux (20 foot-candles) for undyed and untreated organic materials, oil and tempera paintings, and finished wooden surfaces; **and** when these materials are housed with other light-sensitive materials, then the light levels must be maintained at the appropriate level for the most sensitive materials. **If no museum property consisting of undyed or untreated organic materials, oil or tempera paintings, or finished wooden surfaces are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**				Pest Control (spraying, insect traps)	X		
14. Light levels do not exceed 300 lux (30 foot-candles); **and** when items of mixed sensitivity are located within the same space, then the light levels must be maintained at the appropriate level for the most sensitive item.							
15. No light is present in the storage area, except for short durations required for access **or** housekeeping.							
16. Monitor **and** record the level of ultraviolet (UV) radiation from all sources **and** if the UV radiation level exceeds 75 microwatts per lumen, control it by installing UV-filtering material.							
17. Establish **and** maintain an Integrated Pest Management program in the space.							
18. Monitor **and** record gaseous **and** particulate pollution; **and** when detected, control levels of gaseous and particulate pollution to the lowest practical limits.							

19. Record visitor **and** researcher access to storage areas using a consistent system (e.g., a sign-in log).							
20. Written policies and/or procedures are used that control access to **and** govern the use of keys **and** combinations to enter the space.							
21. Written policies and/or procedures are used for opening **and** closing the space.							
22. Written policies and/or procedures are used for accessing museum property **and** museum records in the space.							
23. The appropriate combination of mechanical **and** electronic systems are used to secure the space.							
24. A written Emergency Management Plan exists for the space **and** specifically identifies the museum property located within the space **and** addressed any special needs that may exist regarding the museum property.							
25. Equipment and/or systems, appropriate to the nature of museum property and to the physical structure of the location, is installed to detect **and** suppress fire in the space.							
26. Given the nature of the structure, to the extent possible, make the space within it fire-resistant.							
27. Museum records located in the space are located in an appropriate fire- **and** burglary-resistant container **or** vault which is locked when not in use. **If no records are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**							
28. A written Fire Plan exists **and** contains information specific to the needs of the museum property within the space as it relates to preventing, detecting, and suppressing fire.							
29. The storing of flammable liquids is avoid within the space. **If flammable liquids or materials is present, then enter "1" in the "Yes" column, otherwise enter "1" in the "No" column.**							
30. The space is cleaned on a regular schedule.							
31. Written policies, rules, and/or procedures are used for handling museum property **and** meeting housekeeping standards within the space.							
32. Written policies, rules, and/or procedures are used to prohibit smoking, drinking, **and** eating in the space.							

33. Museum property in the space is examined regularly to detect evidence of deterioration **and** the results are documented accordingly.							
34. Conservation treatments are arranged to stabilize the condition of museum property within the space following professional conservation standards and practices.							
35. The space is large enough to accommodate the museum property that currently exists within it.							
36. The space will accommodate anticipated collection growth. **If the Unit's Management Plan and the curation agreement does not specify collection growth within this space, then enter "1" in the "DNA" column and a comment to that effect.**							
37. Dedicated storage space will be provided in all newly constructed and remodeled storage areas. **If the Unit's Management Plan and the curation agreement does not specify collection growth within this space, then enter "1" in the "DNA" column and a comment to that effect.**							
38. To the extend possible, the spaces is dedicated to the storage of only museum property.							
39. The storage space is organized in a manner to allow for the efficient use of storage equipment and techniques.							
40. The storage space is organized in a manner to allow for optimum, effective access to the museum property located within it.							
41. The museum property is kept in appropriate containers and/or equipment **and** the appropriate museum-quality materials is used for packaging. Note, records and most specimens need special containers or mounts.							
42. Materials **and** techniques are used that protect museum property from damage due to shock or vibration when storage space is located within a high-risk earthquake zones (see Seismic Risk-Zone Map of 1992 at http://pubs.usgs.gov/fs/2005/3052/). **If the space is not located with a high-risk earthquake zone, then enter "1" in the "yes" column, otherwise enter "1" in the "no" column.**							
Percentage for Storage Room	**n/a**	**n/a**	**n/a**				
Questions 43-79 relate to **EXHIBIT** Space							

only.							
43. Monitor **and** record temperature levels.							
44. Avoid abrupt changes in temperature.							
45. Maintain temperature levels within the recommended range of 21°C to 23°C (70°F to 74°F) where human comfort is a factor.							
46. Monitor **and** record relative humidity (RH) levels.							
47. Record RH data continuously for one year **and** evaluate the data before establishing acceptable ranges and limits.							
48. Maintain RH levels below 65% to reduce the potential for mold growth.							
49. Maintain RH levels above 35% to prevent desiccating and shrinking of organic materials (e.g., wood, paper, textiles, leather, hair, fur, feathers, horn, bone, ivory, shell, grasses, fibers, bark, lacquers, and waxes). **If no organic materials are present within the space, then enter "1" in the "DNA" column.**							
50. Establish acceptable ranges **and** limits of RH levels for space, based on the local climate, the nature and condition of the materials constituting the collection, the RH levels to which the materials have been acclimatized, the structure housing museum property, and other relevant factors; ideally, fluctuations should not exceed 3% RH per month.							
51. Maintain RH levels within an acceptable range **and** avoid extreme levels and wide fluctuations.							
52. The equipment (e.g., thermohygrometers, hygrometers, hygrothermographs, psychrometers, and data loggers) used to monitor RH **or** temperature are maintained and calibrated according to the manufacturer's recommendations. **Note, it you answered yes to either 43. or 46. above, then enter either a 'Yes' or 'No' response.**							
53. Light levels are maintained at or below 50 lux (5 foot-candles) for especially light-sensitive materials (e.g., dyed organic material, textiles, watercolors, tapestries, prints and drawings, manuscripts, dyed leather, wallpapers, natural history specimens such as botanical specimens, fur and feathers, and original photographs, including negatives, transparencies, and prints). **If no light-sensitive materials are present within the space, then enter "1" in the**							

"DNA" column and a comment to that effect.							
54. Light levels are maintained at or below 200 lux (20 foot-candles) for undyed and untreated organic materials, oil and tempera paintings, and finished wooden surfaces; **and** when these materials are housed with other light-sensitive materials, then the light levels must be maintained at the appropriate level for the most sensitive materials. **If no museum property consisting of undyed or untreated organic materials, oil or tempera paintings, or finished wooden surfaces are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**							
55. Light levels do not exceed 300 lux (30 foot-candles); **and** when items of mixed sensitivity are located within the same space, then the light levels must be maintained at the appropriate level for the most sensitive item.							
56. Monitor **and** record the level of ultraviolet (UV) radiation from all sources **and** if the UV radiation level exceeds 75 microwatts per lumen, control it by installing UV-filtering material.							
57. Establish **and** maintain an Integrated Pest Management program in the space.							
58. Monitor **and** record gaseous **and** particulate pollution; **and** when detected, control levels of gaseous and particulate pollution to the lowest practical limits.							
59. Written policies and/or procedures are used that control access to **and** govern the use of keys and combinations to enter the space.							
60. Written policies and/or procedures are used for opening **and** closing the space.							
61. Written policies and/or procedures are used for accessing museum property **and** museum records in the space.							
62. The appropriate combination of mechanical **and** electronic systems are used to secure the space.							
63. A written Emergency Management Plan exists for the space **and** specifically identifies the museum property located within the space **and** addressed any special needs that may exist regarding the museum property.							
64. Equipment and/or systems, appropriate to the nature of museum property and to the physical structure of the							

location, is installed to detect **and** suppress fire in the space.							
65. Given the nature of the structure, to the extent possible, make the space within it fire-resistant.							
66. Museum records located in the space are located in an appropriate fire- **and** burglary-resistant container **or** vault which is locked when not in use. **If no records are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**							
67. A written Fire Plan exists **and** contains information specific to the needs of the museum property within the space as it relates to preventing, detecting, and suppressing fire.							
68. The space is cleaned on a regular schedule.							
69. Written policies, rules, and/or procedures are used for handling museum property **and** meeting housekeeping standards within the space.							
70. Written policies, rules, and/or procedures are used to prohibit smoking, drinking, **and** eating in the space.							
71. Museum property in the space is examined regularly to detect evidence of deterioration **and** the results are documented accordingly.							
72. Conservation treatments are arranged to stabilize the condition of museum property within the space following professional conservation standards and practices.							
73. Museum property exhibited in the space is done so in ways that minimizes risks to it.							
74. Consider how best to preserve, protect, and maintain museum property when planning exhibits in the space.							
75. Design and fabricate exhibit cases, to be placed in the space, in ways that promote security, housekeeping, **and** preservation of the museum property.							
76. Protect freestanding museum property within the space by using an appropriate combination of physical, electronic, **and** staffing methods. **If no freestanding museum property is present within the space, then enter "1" in the "DNA" column and a comment to that effect.**							
77. Substitute environmentally sensitive objects on a scheduled basis to minimize deterioration. **If no environmentally sensitive objects are present within the space, then enter "1" in the "DNA" column and a**							

comment to that effect.							
78. Use mounts constructed of museum-quality material to support objects when necessary. **If no items require mounts within the space, then enter "1" in the "DNA" column and a comment to that effect.**							
79. Avoid exhibiting original documents, whenever possible, by using copies. **If documents are not part of the exhibit within the space, then enter "1" in the "DNA" column and a comment to that effect.**							
Percentage for Exhibit Space	**n/a**	**n/a**	**n/a**				
Questions 80–98 relate to **Administrative Office** (DISPLAY) space only.							
80. Keys to the space **and** display cases are controlled.	X						
81. Written policies and/or procedures are used for opening **and** closing the space.							
82. Written guidance exist on how to safely evacuate museum property in the event of a disaster (e.g., storm, flood, or fire).							
83. The space is protected from unauthorized entry.	X	X					
84. A written Fire Plan exists **and** contains information specific to the needs of the museum property within the space as it relates to preventing, detecting, and suppressing fire.							
85. Written policies and/or procedures are used to address accessing **and** moving museum property within the space.							
86. Written policies, rules, and/or procedures are used to prohibit smoking in the space.	X	X	X				
87. Monitor, record, evaluate, **and** control relative humidity (RH) levels **and** temperature to the extent possible.							
88. Keep rapid fluctuations of RH levels **and** temperature to a minimum **and** avoid harmful extremes.	X						
89. Monitor **and** control ultraviolet (UV) radiation from all sources **and** if the UV radiation level exceeds 75 microwatts per lumen, control it by installing UV-filtering material.							
90. Monitor **and** control visible light, to the extent practical, 1) at or below 50 lux (5 foot-candles) for especially light-sensitive materials (e.g., dyed organic material, textiles, watercolors, tapestries, prints and drawings, manuscripts,							

dyed leather, wallpapers, natural history specimens such as botanical specimens, fur and feathers, and original photographs, including negatives, transparencies, and prints); 2) at or below 200 lux (20 foot-candles) for undyed and untreated organic materials, oil paintings and tempera paintings, and finished wooden surfaces; and 3) never exceed 300 lux (30 foot-candles) **and** when items of mixed sensitivity are exhibited together, then the light levels must be maintained at the appropriate level for the most sensitive item.							
91. Establish and maintain an Integrated Pest Management program in the space.	X						
92. Written policies, rules, and/or procedures are used for handling museum property and meeting housekeeping standards within the space.	X						
93. Properly frame and secure two-dimensional art (e.g., painting, sketch). **If no two-dimensional art is present within the space, then enter "1" in the "DNA" column and a comment to that effect.**							
94. Mat **and** protect (with glass or another appropriate material) watercolor paintings, prints, and drawings using archival-quality material. **If no water color paintings, prints or drawings are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**							
95. Display museum property in areas that provide protection from accidental damage.	X						
96. Written policies, rules, and/or procedures are used to prohibit the use of museum property for secondary functions (e.g., basket as a container for waste or plants; hammerstone as a paper weight).		**X**					
97. Textiles are displayed in a manner so that their weight is distributed evenly. **If no textiles are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**							

98. Prevent metals **and** untreated wood from touching textiles. **If no textiles are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**							
Percentage for Administrative Office	**47%**	**20%**	**7%**				
	Headquarters' Building	**Bunkhouse**	**Garage**				
Overall percentage of Rooms Housing Museum Property at Arrowwood NWR	**47%**	**20%**	**7%**				

Chase Lake National Wildlife Refuge Facility

411 DM Questions	Headquarters' Building	36 CFR 79 Factors	Headquarters' Building
Questions 1-42 relate to **STORAGE** space only.			
1. Monitor **and** record temperature levels.		Air conditioning regulation	X
2. Avoid abrupt changes in temperature.		Heat regulation	X
3. Maintain temperature levels within the recommended range of 21°C to 23°C (70°F to 74°F) where human comfort is a factor.		Humidity monitoring and regulation	
4. Temperature level for mixed collections is reduce gradually to a cooler level, avoiding condensation of moisture on cold surfaces, where human comfort is not a factor.		Janitorial Regulation	X
5. Monitor **and** record relative humidity (RH) levels.		Dust regulation (filters)	X
6. Record RH data continuously for one year **and** evaluate the data before establishing acceptable ranges and limits.		Security Detection (intrusion alarms)	X
7. Maintain RH levels below 65% to reduce the potential for mold growth.		Security Deterrent (guards, TV monitors)	
8. Maintain RH levels above 35% to prevent desiccating and shrinking of organic materials (e.g., wood, paper, textiles, leather, hair, fur, feathers, horn, bone, ivory, shell, grasses, fibers, bark, lacquers, and waxes). **If no organic materials are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**		Security Deterrent (controlled access, dead-bolt locks)	X
9. Establish acceptable ranges **and** limits of RH levels for space, based on the local climate, the nature and condition of the materials constituting the collection, the RH levels to which the materials have been acclimatized, the structure housing museum property, and other relevant factors; ideally, fluctuations should not exceed 3% RH per month.		Fire Detection (wired or manual alarms)	X
10. Maintain the RH level within an acceptable range **and** avoid extreme levels **and** wide fluctuations.		Fire Suppression (Sprinkler system)	
11. The equipment (e.g., thermohygrometers, hygrometers, hygrothermographs, psychrometers, and data loggers) used to monitor RH **or** temperature are maintained and calibrated according to the manufacturer's recommendations. **Note, it you answered yes to 1. or 5. above, then enter either a 'Yes' or 'No' response.**		Fire Suppression (fire extinguishers, firewalls)	X
12. Light levels are maintained at or below 50 lux (5 foot-candles) for especially light-sensitive materials (e.g., dyed organic material, textiles, watercolors, tapestries, prints and drawings, manuscripts, dyed leather, wallpapers, natural		Pest Monitoring (routine check of storage areas)	X

history specimens such as botanical specimens, fur and feathers, and original photographs, including negatives, transparencies, and prints). **If no light-sensitive materials are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
13. Light levels are maintained at or below 200 lux (20 foot-candles) for undyed and untreated organic materials, oil and tempera paintings, and finished wooden surfaces; **and** when these materials are housed with other light-sensitive materials, then the light levels must be maintained at the appropriate level for the most sensitive materials. **If no museum property consisting of undyed or untreated organic materials, oil or tempera paintings, or finished wooden surfaces are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**		Pest Control (spraying, insect traps)	
14. Light levels do not exceed 300 lux (30 foot-candles); **and** when items of mixed sensitivity are located within the same space, then the light levels must be maintained at the appropriate level for the most sensitive item.			
15. No light is present in the storage area, except for short durations required for access **or** housekeeping.			
16. Monitor **and** record the level of ultraviolet (UV) radiation from all sources **and** if the UV radiation level exceeds 75 microwatts per lumen, control it by installing UV-filtering material.			
17. Establish **and** maintain an Integrated Pest Management program in the space.			
18. Monitor **and** record gaseous **and** particulate pollution; **and** when detected, control levels of gaseous and particulate pollution to the lowest practical limits.			
19. Record visitor **and** researcher access to storage areas using a consistent system (e.g., a sign-in log).			
20. Written policies and/or procedures are used that control access to **and** govern the use of keys **and** combinations to enter the space.			
21. Written policies and/or procedures are used for opening **and** closing the space.			
22. Written policies and/or procedures are used for accessing museum property **and** museum records in the space.			
23. The appropriate combination of mechanical **and** electronic systems are used to secure the space.			
24. A written Emergency Management Plan exists for the space **and** specifically identifies the museum property located within the space **and** addressed any special needs that may exist regarding the museum property.			
25. Equipment and/or systems, appropriate to the nature of museum property and to the physical structure of the location, is installed to detect **and** suppress fire in the space.			
26. Given the nature of the structure, to the extent possible, make the space within it fire-resistant.			

27. Museum records located in the space are located in an appropriate fire- **and** burglary-resistant container **or** vault which is locked when not in use. **If no records are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
28. A written Fire Plan exists **and** contains information specific to the needs of the museum property within the space as it relates to preventing, detecting, and suppressing fire.			
29. The storing of flammable liquids is avoid within the space. **If flammable liquids or materials is present, then enter "1" in the "Yes" column, otherwise enter "1" in the "No" column.**			
30. The space is cleaned on a regular schedule.			
31. Written policies, rules, and/or procedures are used for handling museum property **and** meeting housekeeping standards within the space.			
32. Written policies, rules, and/or procedures are used to prohibit smoking, drinking, **and** eating in the space.			
33. Museum property in the space is examined regularly to detect evidence of deterioration **and** the results are documented accordingly.			
34. Conservation treatments are arranged to stabilize the condition of museum property within the space following professional conservation standards and practices.			
35. The space is large enough to accommodate the museum property that currently exists within it.			
36. The space will accommodate anticipated collection growth. **If the Unit's Management Plan and the curation agreement does not specify collection growth within this space, then enter "1" in the "DNA" column and a comment to that effect.**			
37. Dedicated storage space will be provided in all newly constructed and remodeled storage areas. **If the Unit's Management Plan and the curation agreement does not specify collection growth within this space, then enter "1" in the "DNA" column and a comment to that effect.**			
38. To the extend possible, the spaces is dedicated to the storage of only museum property.			
39. The storage space is organized in a manner to allow for the efficient use of storage equipment and techniques.			
40. The storage space is organized in a manner to allow for optimum, effective access to the museum property located within it.			
41. The museum property is kept in appropriate containers and/or equipment **and** the appropriate museum-quality materials is used for packaging. Note, records and most specimens need special containers or mounts.			

42. Materials **and** techniques are used that protect museum property from damage due to shock or vibration when storage space is located within a high-risk earthquake zones (see Seismic Risk-Zone Map of 1992 at http://pubs.usgs.gov/fs/2005/3052/). **If the space is not located with a high-risk earthquake zone, then enter "1" in the "yes" column, otherwise enter "1" in the "no" column.**			
Percentage for Storage Space	**n/a**		
Questions 43-79 relate to **EXHIBIT** Space only.			
43. Monitor **and** record temperature levels.			
44. Avoid abrupt changes in temperature.			
45. Maintain temperature levels within the recommended range of 21°C to 23°C (70°F to 74°F) where human comfort is a factor.			
46. Monitor **and** record relative humidity (RH) levels.			
47. Record RH data continuously for one year **and** evaluate the data before establishing acceptable ranges and limits.			
48. Maintain RH levels below 65% to reduce the potential for mold growth.			
49. Maintain RH levels above 35% to prevent desiccating and shrinking of organic materials (e.g., wood, paper, textiles, leather, hair, fur, feathers, horn, bone, ivory, shell, grasses, fibers, bark, lacquers, and waxes). **If no organic materials are present within the space, then enter "1" in the "DNA" column.**			
50. Establish acceptable ranges **and** limits of RH levels for space, based on the local climate, the nature and condition of the materials constituting the collection, the RH levels to which the materials have been acclimatized, the structure housing museum property, and other relevant factors; ideally, fluctuations should not exceed 3% RH per month.			
51. Maintain RH levels within an acceptable range **and** avoid extreme levels and wide fluctuations.			
52. The equipment (e.g., thermohygrometers, hygrometers, hygrothermographs, psychrometers, and data loggers) used to monitor RH **or** temperature are maintained and calibrated according to the manufacturer's recommendations. **Note, it you answered yes to either 43. or 46. above, then enter either a 'Yes' or 'No' response.**			
53. Light levels are maintained at or below 50 lux (5 foot-candles) for especially light-sensitive materials (e.g., dyed organic material, textiles, watercolors, tapestries, prints and drawings, manuscripts, dyed leather, wallpapers, natural history specimens such as botanical specimens, fur and feathers, and original photographs, including negatives, transparencies, and prints). **If no light-sensitive materials are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			

54. Light levels are maintained at or below 200 lux (20 foot-candles) for undyed and untreated organic materials, oil and tempera paintings, and finished wooden surfaces; **and** when these materials are housed with other light-sensitive materials, then the light levels must be maintained at the appropriate level for the most sensitive materials. **If no museum property consisting of undyed or untreated organic materials, oil or tempera paintings, or finished wooden surfaces are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
55. Light levels do not exceed 300 lux (30 foot-candles); **and** when items of mixed sensitivity are located within the same space, then the light levels must be maintained at the appropriate level for the most sensitive item.			
56. Monitor **and** record the level of ultraviolet (UV) radiation from all sources **and** if the UV radiation level exceeds 75 microwatts per lumen, control it by installing UV-filtering material.			
57. Establish **and** maintain an Integrated Pest Management program in the space.			
58. Monitor **and** record gaseous **and** particulate pollution; **and** when detected, control levels of gaseous and particulate pollution to the lowest practical limits.			
59. Written policies and/or procedures are used that control access to **and** govern the use of keys and combinations to enter the space.			
60. Written policies and/or procedures are used for opening **and** closing the space.			
61. Written policies and/or procedures are used for accessing museum property **and** museum records in the space.			
62. The appropriate combination of mechanical **and** electronic systems are used to secure the space.			
63. A written Emergency Management Plan exists for the space **and** specifically identifies the museum property located within the space **and** addressed any special needs that may exist regarding the museum property.			
64. Equipment and/or systems, appropriate to the nature of museum property and to the physical structure of the location, is installed to detect **and** suppress fire in the space.			
65. Given the nature of the structure, to the extent possible, make the space within it fire-resistant.			
66. Museum records located in the space are located in an appropriate fire- **and** burglary-resistant container **or** vault which is locked when not in use. **If no records are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
67. A written Fire Plan exists **and** contains information specific to the needs of the museum property within the space as it relates to preventing, detecting, and suppressing fire.			
68. The space is cleaned on a regular schedule.			

69. Written policies, rules, and/or procedures are used for handling museum property **and** meeting housekeeping standards within the space.			
70. Written policies, rules, and/or procedures are used to prohibit smoking, drinking, **and** eating in the space.			
71. Museum property in the space is examined regularly to detect evidence of deterioration **and** the results are documented accordingly.			
72. Conservation treatments are arranged to stabilize the condition of museum property within the space following professional conservation standards and practices.			
73. Museum property exhibited in the space is done so in ways that minimizes risks to it.			
74. Consider how best to preserve, protect, and maintain museum property when planning exhibits in the space.			
75. Design and fabricate exhibit cases, to be placed in the space, in ways that promote security, housekeeping, **and** preservation of the museum property.			
76. Protect freestanding museum property within the space by using an appropriate combination of physical, electronic, **and** staffing methods. **If no freestanding museum property is present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
77. Substitute environmentally sensitive objects on a scheduled basis to minimize deterioration. **If no environmentally sensitive objects are present within the space, then enter "1" in the "DNA" column and a comment to that effect**.			
78. Use mounts constructed of museum-quality material to support objects when necessary. **If no items require mounts within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
79. Avoid exhibiting original documents, whenever possible, by using copies. **If documents are not part of the exhibit within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
Percentage for Exhibit Space	**n/a**		
Questions 80–98 relate to **Administrative Office** (DISPLAY) space only.			
80. Keys to the space **and** display cases are controlled.			
81. Written policies and/or procedures are used for opening **and** closing the space.			
82. Written guidance exists on how to safely evacuate museum property in the event of a disaster (e.g., storm, flood, or fire).			
83. The space is protected from unauthorized entry.	X		
84. A written Fire Plan exists **and** contains information specific to the needs of the museum property within the space as it relates to preventing, detecting, and suppressing fire.			

85. Written policies and/or procedures are used to address accessing **and** moving museum property within the space.			
86. Written policies, rules, and/or procedures are used to prohibit smoking in the space.	X		
87. Monitor, record, evaluate, **and** control relative humidity (RH) levels **and** temperature to the extent possible.			
88. Keep rapid fluctuations of RH levels **and** temperature to a minimum **and** avoid harmful extremes.	X		
89. Monitor **and** control ultraviolet (UV) radiation from all sources **and** if the UV radiation level exceeds 75 microwatts per lumen, control it by installing UV-filtering material.			
90. Monitor **and** control visible light, to the extent practical, 1) at or below 50 lux (5 foot-candles) for especially light-sensitive materials (e.g., dyed organic material, textiles, watercolors, tapestries, prints and drawings, manuscripts, dyed leather, wallpapers, natural history specimens such as botanical specimens, fur and feathers, and original photographs, including negatives, transparencies, and prints); 2) at or below 200 lux (20 foot-candles) for undyed and untreated organic materials, oil paintings and tempera paintings, and finished wooden surfaces; and 3) never exceed 300 lux (30 foot-candles) **and** when items of mixed sensitivity are exhibited together, then the light levels must be maintained at the appropriate level for the most sensitive item.			
91. Establish and maintain an Integrated Pest Management program in the space.	X		
92. Written policies, rules, and/or procedures are used for handling museum property and meeting housekeeping standards within the space.			
93. Properly frame and secure two-dimensional art (e.g., painting, sketch). **If no two-dimensional art is present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
94. Mat **and** protect (with glass or another appropriate material) watercolor paintings, prints, and drawings using archival-quality material. **If no water color paintings, prints or drawings are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
95. Display museum property in areas that provide protection from accidental damage.	X		
96. Written policies, rules, and/or procedures are used to prohibit the use of museum property for secondary functions (e.g., basket as a container for waste or plants; hammerstone as a paper weight).			
97. Textiles are displayed in a manner so that their weight is distributed evenly. **If no textiles are present within the space, then enter "1" in the "DNA" column and a comment to that effect.**			
98. Prevent metals **and** untreated wood from touching textiles. **If no textiles are**			

present within the space, then enter "1" in the "DNA" column and a comment to that effect.			
Percentage for Administrative Office	**33%**		
	Headquarters' Building		
Overall percentage of Rooms Housing Museum Property at Chase Lake NWR	**33%**		

Appendix 2

Building Questionnaire Form Used for Building Compliance with 36 CFR Part 79

Repository Evaluation and Questionnaire

Project _____
Date of Visit _____
Evaluation Team _____
Repository _____
Address _____
Person(s) Contacted/Title _____
Collection(s) Examined _____

Number of Collections Storage Areas _____ **Forms Attached for other Areas?** _____
Name of Collections Storage Area on this form _____

Entire Repository/New and Old Building

1. What is the name of the building and who owns it?

2. What was the original use of the building?

3. What type of building is it?
   - ❑ Collections facility ❑ Museum
   - ❑ University classroom/lab ❑ Office building
   - ❑ Other _____

4. Is the facility easily accessible from major highways/cities/airports?	❑ Yes	❑ No
5. Is the facility equipped with a loading dock for incoming collections?	❑ Yes	❑ No
6. Is the loading dock secured?	❑ Yes	❑ No
7. Is parking available on the property for visiting researchers?	❑ Yes	❑ No
8. Is the facility located in a flood plain, earthquake zone, hurricane zone, or near a nuclear power plant?	❑ Yes	❑ No

Building Adequacy

1. What is approximate age of building and/or date of construction (e.g., 1934, or 50 years)?

2. Type of foundation:
   - ❑ Concrete (poured or block) ❑ Brick ❑ Dirt
   - ❑ Stone ❑ Other _____

3. Type of exterior walls:
   - ❑ Concrete (poured or block) ❑ Wood siding ❑ Prefabricated
   - ❑ Aluminum siding ❑ Stucco ❑ Brick
   - ❑ Corrugated metal ❑ Other _____

4. Type of roof:
   - ❑ Built-up (asphalt) ❑ Tin ❑ Shingles
   - ❑ Slate tile ❑ Corrugated metal ❑ Rubber
   - ❑ Clay tile ❑ Other metal ❑ Other _____

5. Age of roof_____

6. Are the roof and foundation structurally solid? Are there any cracks in the foundation? Are there any leaks in the roof?
   Solid? ❑ Yes ❑ No
   Cracks? ❑ Yes ❑ No
   Leaks? ❑ Yes ❑ No

7. Total number of floors:
   Above grade _____ Below grade _____

8. Have there been any internal or external renovations? Explain. ❑ Yes ❑ No

Environment

1. Type of temperature controls in REPOSITORY:
   ❑ HVAC ❑ Forced-air heat (central or zoned)
   ❑ Central A/C ❑ Radiator (steam or hot water)
   ❑ Window A/C ❑ Space heater
   ❑ Fans ❑ None
   ❑ Other _____

2. Are there dust filters for environmental controls? Explain. ❑ Yes ❑ No

3. Is the humidity regulated and/or monitored? Explain. ❑ Yes ❑ No

4. Is the building regularly maintained? If so, by whom? ❑ Yes ❑ No
   ❑ Curatorial staff ❑ Janitorial staff
   ❑ Professional cleaning company ❑ Bonded agency
   ❑ Other _____

5. Is an integrated pest management plan in place? Explain. ❑ Yes ❑ No

6. Does it include: ❑ Monitoring ❑ Control

7. Are there signs of infestation by insects or rodents? Explain. ❑ Yes ❑ No

Space Utilization

1. Total square feet of REPOSITORY:

2. Types of activity areas/rooms in REPOSITORY:
   - ❑ Receiving/loading dock
   - ❑ Artifact holding area
   - ❑ Artifact washing area
   - ❑ Artifact processing lab
   - ❑ Artifact conservation lab
   - ❑ Temporary artifact storage area
   - ❑ Hazardous material storage area
   - ❑ Materials/supplies storage area
   - ❑ Exhibit area
   - ❑ Artifact study room
   - ❑ Records study room
   - ❑ Photographic storage room
   - ❑ Records storage room
   - ❑ Walk-in refrigeration unit
   - ❑ Offices
   - ❑ Security monitoring space
   - ❑ Mechanical/utility room
   - ❑ Other _____

3. Do any of the archaeological laboratories use hazardous chemicals? ❑ Yes ❑ No

4. Is the lab within the collections storage area? ❑ Yes ❑ No

5. List chemicals used in lab.

6. Ventilation method(s) used in lab:
   - ❑ Fume hood vent directly to exterior
   - ❑ Fume hood vent to adjacent room
   - ❑ No fume hood, only window ventilation
   - ❑ No fume hood, box fan used to ventilate
   - ❑ None
   - ❑ Other _____

7. Is there an eye-wash/emergency shower station? ❑ Yes ❑ No

Security

1. Security measures for REPOSITORY:
   - ❑ Intrusion alarm
   - ❑ Intrusion alarm wired to police
   - ❑ Intrusion alarm wired to security co.
   - ❑ 24-hour in-house guard
   - ❑ On military installation
   - ❑ Controlled access
   - ❑ Motion detectors
   - ❑ Dead bold lock
   - ❑ Key lock
   - ❑ Window lock
   - ❑ Padlock
   - ❑ Other _____

2. List where security measures are located (e.g., all exterior doors, front door).

3. Have there been past episodes of unauthorized entry? Explain. ❑ Yes ❑ No

4. Are any windows considered accessible from outside? Explain ❑ Yes ❑ No

Fire Safety

1. Types of fire protection in REPOSITORY:

Detection

- ❑ Manual fire alarms
  Last Inspected _____
- ❑ Fire alarm wired to fire dept.
  Last Inspected _____
- ❑ Smoke detector
  Last Inspected _____
- ❑ Heat sensor
  Last Inspected _____
- ❑ Other _____

Suppression

- ❑ Sprinkler system (wet or dry pipe)
  Last Inspected _____
- ❑ Halon
  Last Inspected _____
- ❑ Fire door
- ❑ Fire wall
- ❑ Fire extinguishers:
  Last Inspected _____
- ❑ Other_____

2. Does the facility possess fire rated stairs/corridors? Explain ❑ Yes ❑ No

Utilities

1. Types of utilities/support facilties present in REPOSITORY:
   - ❑ Running water for processing artifacts
   - ❑ Restrooms
   - ❑ Other _____
   - ❑ Telephone
   - ❑ Electricity

2. Age of utility systems:
   - ❑ Plumbing
   - ❑ Electrical
   - ❑ Heating
   - ❑ A/C

3. Is there evidence of water damage to the building or collections? Explain ❑ Yes ❑ No

COLLECTIONS STORAGE AREA

(Note: If more than one Collections Storage Area, fill out a separate form for each.)

Name of Collections Storage Area (e.g., Room 117, Archaeology Lab)

Does Collection Storage Area house: ❑ Artifacts ❑ Records ❑ Both

1. Type of floor in COLLECTIONS STORAGE AREA:
   - ❑ Concrete (poured or block)
   - ❑ Wood
   - ❑ Dirt
   - ❑ Elevated
   - ❑ Other _____

2. Type of interior walls in COLLECTIONS STORAGE AREA:
   - ❑ Wallboard/sheet rock
   - ❑ Corrugated metal
   - ❑ Plywood
   - ❑ Concrete (poured or block)
   - ❑ Plaster
   - ❑ Painted
   - ❑ Other _____

3. Is there any damage to walls (e.g., cracked, peeling paint)? Explain ❑ Yes ❑ No

4. Type of ceiling in COLLECTIONS STORAGE AREA:
   - ❑ Plaster
   - ❑ Suspended acoustical tile
   - ❑ Metal
   - ❑ Concrete
   - ❑ Wood/metal studs with sheet rock
   - ❑ None/open to roof
   - ❑ Other _____

5. Is there any damage to ceiling (e.g., cracked, water)? Explain ❑ Yes ❑ No

6. Are there any windows in the COLLECTIONS STORAGE AREA ❑ Yes ❑ No
   N=_____

8. Types of shades on windows:
   - ❑ Blinds
   - ❑ Painted
   - ❑ None
   - ❑ Shades
   - ❑ UV film
   - ❑ Other _____

9. Type of window frame:
   - ❑ Aluminum
   - ❑ Steel
   - ❑ Wood
   - ❑ Other _____

10. Is there evidence that the frame leaks water and/or air? Explain ❑ Yes ❑ No

11. Have the windows and/or frames ever been replaced? Explain ❑ Yes ❑ No

12. Types of doors in COLLECTIONS STORAGE AREA (list number and locations):

Interior

- ❑ Wood panel
- ❑ Metal panel
- ❑ Wood stile & rail
- ❑ Glass
- ❑ Metal with glass window
- ❑ Wood with glass window
- ❑ Glass sliding
- ❑ Metal sliding
- ❑ Overhead loading
- ❑ Other _____

Number Connecting to the rest of the repository: _____

Exterior

- ❑ Wood panel
- ❑ Metal panel
- ❑ Wood stile & rail
- ❑ Glass
- ❑ Metal with glass window
- ❑ Wood with glass window
- ❑ Glass sliding
- ❑ Metal sliding
- ❑ Overhead loading
- ❑ Other _____

Number Connecting to outside: _____

13. Is asbestos present anywhere? Explain ❑ Yes ❑ No

14. Is dust present anywhere? Explain ❑ Yes ❑ No

Space Utilization

1. Total square feet of COLLECTIONS STORAGE AREA: _____

2. Types of activity areas in COLLECTIONS STORAGE AREA:
   - ❑ Receiving/loading dock
   - ❑ Artifact holding area
   - ❑ Artifact washing area
   - ❑ Artifact processing lab
   - ❑ Artifact conservation lab
   - ❑ Temporary artifact storage area
   - ❑ Hazardous material storage area
   - ❑ Materials/supplies storage area
   - ❑ Exhibit area
   - q Artifact study room
   - ❑ Records study room
   - ❑ Photographic storage room
   - ❑ Records storage room
   - ❑ Walk-in refrigeration unit
   - ❑ Offices
   - ❑ Security monitoring space
   - ❑ Mechanical/utility room
   - ❑ Other _____

3. Types of collections present (present/absence and approximate percentage):
   - ❑ Archaeological
   - ❑ Paleontological
   - ❑ Geological
   - ❑ Other
   - ❑ Ethnographic
   - ❑ Botanical
   - ❑ Zoological

4. COLLECTIONS STORAGE AREA is filled to _____ capacity:
   - ❑ 0%
   - ❑ 20%
   - ❑ 40%
   - ❑ 60%
   - ❑ 80%
   - ❑ 100%
   - ❑ 10%
   - ❑ 30%
   - ❑ 50%
   - ❑ 70%
   - ❑ 90%

5. Is overstacking of boxes apparent? Explain ❑ Yes ❑ No

6. Types of clutter in COLLECTIONS STORAGE:
   - ❑ Empty boxes
   - ❑ Full artifact boxes
   - ❑ Appliances
   - ❑ Field equipment
   - ❑ Personal items
   - ❑ Books/reports

- ❑ Curation supplies ❑ Janitorial supplies ❑ Office furniture
- ❑ Other _____

Environment

1. Types of temperature controls in COLLECTIONS STORAGE AREA:
   - ❑ HVAC ❑ Forced-air heat (central or zoned)
   - ❑ Central A/C ❑ Radiator (steam or hot water)
   - ❑ Window A/C ❑ Space heater
   - ❑ Fans ❑ None
   - ❑ Other

2. Are there dust filters for the environmental controls and how often are they changed? Explain. ❑ Yes ❑ No

3. Is humidity regulated and/or monitored? Explain. ❑ Yes ❑ No
   - ❑ Sling psychrometer ❑ Hygrothermograph
   - ❑ Hygrometer ❑ Other _____

4. Are charts from devices analyzed? ❑ Yes ❑ No

5. What are the targeted temperature and humidity ranges in the COLLECTIONS STORAGE AREA?
   Temperature _____ Humidity_____

3. Is humidity regulated and/or monitored? Explain. ❑ Yes ❑ No
   - ❑ Sling psychrometer ❑ Hygrothermograph
   - ❑ Hygrometer ❑ Other _____

7. Are there UV filters on lights? ❑ Yes ❑ No

8. Is the COLLECTIONS STORAGE AREA regularly maintained? ❑ Yes ❑ No
   By whom?
   - ❑ Curatorial staff ❑ Janitorial staff
   - ❑ Professional cleaning company ❑ Bonded agency
   - ❑ Other _____

9. How often does maintenance/cleaning take place?
   - ❑ Daily ❑ Monthly ❑ As-needed basis
   - ❑ Weekly ❑ Yearly ❑ Other _____

10. Do heating/cooling systems operate 24 hours/day? ❑ Yes ❑ No

11. Does it provide sufficient climate control? ❑ Yes ❑ No

12. Does the HVAC system possess a reheat coil or other humidity control devices? Explain. ❑ Yes ❑ No

13. Are there any Special Climate Zones maintained in the area? ❑ Yes ❑ No

Security

1. Security measures for COLLECTIONS STORAGE AREA:
   - ❑ Intrusion alarm
   - ❑ Intrusion alarm wired to police
   - ❑ Intrusion alarm wired to security co.
   - ❑ 24-hour in-house guard
   - ❑ On military installation
   - ❑ Controlled access
   - ❑ Motion detectors
   - ❑ Dead bolt lock
   - ❑ Key lock
   - ❑ Window lock
   - ❑ Padlock
   - ❑ Other _____

2. List where security measures are located (e.g., all exterior doors, front door).

3. Type of security measures for type collections/special artifacts:
   - ❑ Safe
   - ❑ Museum specimen cabinet
   - ❑ Walk-in vault
   - ❑ Other _____

4. Have there been past episodes of unauthorized entry? ❑ Yes ❑ No

5. Are any windows considered accessible from outside? Explain. ❑ Yes ❑ No

Fire Safety

1. Types of fire protection in COLLECTIOSN STORAGE AREA:

   Detection
   - ❑ Manual fire alarms
     Last Inspected _____
   - ❑ Fire alarm wired to fire dept.
     Last Inspected _____
   - ❑ Smoke detector
     Last Inspected _____
   - ❑ Heat sensor
     Last Inspected _____
   - ❑ Other _____

   Suppression
   - ❑ Sprinkler system (wet or dry pipe)
     Last Inspected _____
   - ❑ Halon
     Last Inspected _____
   - ❑ Fire door
   - ❑ Fire wall
   - ❑ Fire extinguishers:
     Last Inspected _____
   - ❑ Other_____

2. Does the facility possess fire rated stairs/corridors? Explain. ❑ Yes ❑ No

Pest Control

1. Is there an integrated pest management plan for the COLLECTIONS STORAGE AREA? Explain. ❑ Yes ❑ No

2. Does it include: ❑ Monitoring ❑ Control

3. Precautions taken against insects:
   - ❑ Mouse/rat traps
   - ❑ Spray/bomb
   - ❑ Professional pest management company
   - ❑ Other _____
   - ❑ No-Pest strips
   - ❑ Roach motels
   - ❑ None

4. How often are precautions taken?
   - ❑ Daily
   - ❑ Weekly
   - ❑ Other _____
   - ❑ Monthly
   - ❑ Yearly
   - ❑ As-needed basis
   - ❑ Never

5. Types of infestation in COLLECTIONS STORAGE AREA:
   - ❑ Rodent/bird nests
   - ❑ Insect larvae
   - ❑ Snake skin
   - ❑ Other _____
   - ❑ Chewed holes
   - ❑ Rodent feces
   - ❑ None

Utilities

1. Types of utilities/support facilities present in COLLECTIONS STORAGE AREA:
   - ❑ Running water for processing artifacts
   - ❑ Restrooms
   - ❑ Other _____
   - ❑ Telephone
   - ❑ Electricity

2. Are overhead pipes present in COLLECTIONS STORAGE AREA? Explain. ❑ Yes ❑ No

3. Are collections stored under pipes? Explain. ❑ Yes ❑ No

4. Are overhead pipes functional (e.g., do they still contain water)? Explain. ❑ Yes ❑ No

5. Has there been a failure of these systems? Explain. ❑ Yes ❑ No

6. Is the floor load capacity sufficient for collections storage? Explain. ❑ Yes ❑ No
   Floor Load _____

7. Is the facility compliant with the
   Americans with Disabilities Act? Explain. ❑ Yes ❑ No

8. Is there construction/renovation planned that would disrupt collections storage? Explain. ❑ Yes ❑ No

9. Percentages of collections storage used for other purposes: ❑ 0 ❑ 25 ❑ 50 ❑ 75 ❑ 100

Sketch Diagram of COLLECTIONS STORAGE AREA

Sketch Diagram of REPOSITORY

Appendix 3

Object and Record Rehabilitation Costs and Explanations

The St. Louis District object rehabilitation costs can be divided into three sections: processing, data-entry, and supplies. Using time and cost information from previous SLD rehabilitation projects, the following rehabilitation steps were calculated. For objects, it was determined that one standard cubic-foot box takes approximately 12 hours for processing and 3.25 hours for data-entry. Taking these figures and using a base GS-9 hourly rate, a $925 per box estimate was generated. Each task was assigned a level of time required for completion:

1. Sorting by provenience and materials unless otherwise noted—20% of the time to complete or $925 X 0.2 X cubic footage for task total.

2. Bagging—all materials are placed in appropriate archival-quality, zip-lock bags—30% or $925 X 0.3 X cubic footage for task total.

3. Acid-free inserts are created and placed inside each new bag—30% or $925 X 0.3 X cubic footage for task total.

4. Boxes—all rebagged objects are placed into new archival boxes—10% or $925 X 0.1 X cubic footage for task total.

5. Labels are applied to all new boxes—10% or $925 X 0.1 X cubic footage for task total.

A majority of the FWS archaeological collections assessed require a full rehabilitation effort. The cost estimates do not include the following: (1) cleaning the artifacts, (2) directly labeling artifacts, (3) transportation to/from St. Louis, (4) curation fees at the final repository, or (5) a NAGPRA inventory.

Complete rehabilitation of associated records—paper, photographs, electronic, audiovisual, oversized materials—involves four tasks.

1. A duplicate, or safety copy, of the records is created, packaged, and arranged identically to the original documents.

2. The collection of records is formally described in a finding aid.

3. The records are packaged in archivally sound primary and secondary containers, and all containers are labeled appropriately (i.e., recorded in permanent ink or pencil with consistent label information).

4. The records are physically arranged in some logical order.

Based on the amount of supplies and labor hours required to rehabilitate one linear foot of records—nine inches of paper, 1.5 inches of photographs, and 0.5 inches each of electronic, audiovisual, and oversized materials—an estimated cost per task was determined for one linear foot of records.

1. $3,133—safety copy

2. $ 719—finding aid

3. $1,844—packaging (including boxing) and labeling

4. $ 660—arrangement

Labor costs were estimated using the hourly rate of a GS-9 ($72). In order to calculate the estimated rehabilitation cost for a collection, we multiplied the above task-specific costs by the linear feet of records. Where tasks already had been completed for a refuge, this task-specific cost was zero. For example, the estimated cost to rehabilitate the 10.68 linear feet in VC 1 at Izembek NWR is $60,833, which is comprised of the following task-specific costs.

1. $33,460 for a safety copy

2. $ 7,679 for a finding aid

3. $ 6,565 for boxing (1/3 of the packaging and labeling cost)

4. $ 6,565 for labeling (1/3 of the packaging and labeling cost)

5. $ 6,565 for foldering (1/3 of the packaging and labeling cost)

6. $ 0 for arrangement

For budgeting purposes, the estimated records rehabilitation costs should be viewed as a maximum cost. The St. Louis District can prepare a more-refined cost if we know which specific materials will be rehabilitated and when.

Since both artifacts and records are retrieved and delivered simultaneously, two travel costs (i.e., collection retrieval and delivery) are shared by the objects and archives staff. It is imperative to ensure that these travel costs are accounted for in the project budget only once. Estimates should be based on $1,000/week for each St. Louis District staff member that makes one of these trips.