COUNCIL OF TEXAS ARCHEOLOGISTS

GUIDELINES AND STANDARDS FOR CURATION

Prepared by the Curation Committee
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CONTENTS

1 INTRODUCTION 1
2 GUIDELINES FOR SUBMITTING COLLECTIONS FOR CURATION 2
2.1 Pre-Curation Field Strategies 2
2.1.1 Excavation and Field Conservation 3
2.2 Arranging for Curation with an Archeological Repository 5
2.2.1 Letter of Request for Housing 5
2.2.2 Letter of Transfer/Ownership 6
2.2.3 Letter of Acceptance 6
2.3 Standards for Preparing Archeological Records 7
2.3.1 Guidelines for Environmental Conditions by Material Type (adapted from NPS Museum Handbook, Part I [NPS 2019b]) 8
2.3.2 Field Recording 9
2.4 Standards for Preparing Material Collections 9
2.4.1 Labeling 10
2.4.2 Packaging 11
2.4.3 Conservation 11
2.5 Checklist for Submitting Archeological Material Collections 12
3 GUIDELINES FOR TREATMENT OF HUMAN REMAINS 13
3.1 Cleaning 14
3.2 Drying 14
3.3 Cataloging and Labeling 14
3.4 Packaging 14
4 NEGATIVE FINDINGS PROJECTS 15
5 CONSIDERATIONS FOR COLLECTIONS-BASED RESEARCH 15
6 BIBLIOGRAPHY 16

Appendices

Appendix A. **Federal and State Laws**
Appendix B. **Useful Terms**
Appendix C. **Example of a Project-Specific Field Curation Protocol**
Appendix D. **Field Conservation Tips**

The Council of Texas Archeologists Curation Committee and its predecessors have a long history in developing curatorial standards. This document replaces the Council of Texas Archeologists Guidelines for Curation Standards and Procedures, as amended. Professional archeologists can refer to these updated guidelines when preparing and organizing archeological research collections for long-term curation. These guidelines and standards will be reviewed and updated (if needed) every five years.

1 INTRODUCTION

Archeological sites are unique and nonrenewable cultural resources. Archeological investigations often result in the partial or total destruction of sites, leaving the archeological record consisting of the physical objects (i.e., artifacts, samples) and the associated documentation (e.g., permits, field/laboratory records, photographs, reports). These collections are the data sources for both present and future research and interpretation, and represent the cultural patrimony of the federal government, the state, and private landowners. Accordingly, it is necessary to systematically document, process (e.g., clean, label), inventory, and permanently house these collections in perpetuity. Selecting a museum or repository [herein repository] to provide professional and systematic curatorial services on a permanent basis should be of utmost concern and consideration to all members of the archeological community, and should be chosen in line with requirements for federal collections as set out in 36 CFR Part 79. and for state-associated collections as outlined in Chapter 29 of the Texas Administrative Code .

Archeologists working on projects/research are encouraged to utilize these guidelines into developing project budgets, schedules, and personnel requirements. Repositories are encouraged to refer to these guidelines when considering institutional staff and policy development, long range planning, and modification/expansion of facilities.

When a qualified archeologist conducts a cultural resource survey, excavation, or other study, the research design should contain the collection strategy and curation plan approved by the lead agency. Ideally, all project planning relating to the curation of project records and artifacts should be done in consultation with the Curator or Collections Manager of the selected repository. The field collection strategy should be governed by a research design that addresses the management and research goals of the project, the types of materials to be collected and curated, and a systematic sampling that is acceptable to the principal investigator, review agencies, and recipient repository. As a minimum, the collection strategy should include provisions for a representative sample of all classes of cultural materials unless there is an overarching concern (e.g., health risk, repatriation of human burial remains, or impracticality of stabilization), and/or protocols for adequately recording and documenting artifacts in the field. Complete objects are generally rare and should receive high priority for collection to facilitate future research and interpretive display. Fragmentary objects with diagnostic attributes (e.g., patterns, complete dimensions, temporal attributes, stylistic attributes, makers' marks, use-wear marks, etc.) are important for comparative analysis and should generally be saved. Material with residues, chemicals, or elements potentially useful for future studies should also be prioritized for retention.

When cultural materials are encountered as the result of a cultural resource survey, excavation, or other study, archival procedures must be followed and decisions must be made by qualified archeologists as to what must be recorded, discarded, or saved for a permanent collection. When eliminating material, archeologists may have to consider hazards to health and safety, irreversible deterioration, importance for scientific research, heritage appreciation, educational value, or its age being too recent to qualify as historical. Such decisions also must consider practical factors, such as weighing the costs of curation against the present and potential heritage and research values of the collections, as well as laws regulating

the disposal of collections such as Chapter 26.17 of the Texas Administrative Code. As it is extremely difficult to predict the potential for research, a conservative approach is recommended.

For collections recovered from submerged environments under an Underwater Excavation permit, conservation treatment of the recovered artifacts is a requirement of the permit. While not required for terrestrial investigations, conservation treatments for certain classes of artifacts, such as metal and organics, may be necessary or at least beneficial for the long-term preservation of the artifact. Archeologists should consult with professional conservators to determine if treatment is required or feasible, what type of treatment is appropriate, and at what cost. Conservation measures should be completed before acquisition by the permanent repository, as part of the project proposal costs. Once accessioned by a repository, any subsequent conservation and maintenance measures are the responsibility of the repository.

Recording practices and procedures should be coordinated with the Curator or Collections Manager and included in the archeological budget. Of particular concern should be the following:

1) All paper products used for field notes, catalogs, labels, tags, and reports should be of archival quality.
2) Electronic records should be compatible with the repository's system(s).
3) Photographs and other documents should be archivally processed and placed in archival holders.

Identifying labels and/or numbers should be affixed to each artifact with reversible but stable archival materials whenever feasible. For example, organic materials are not suitable for direct labeling, and certain bulk categories may only need to have a percentage labeled.

When preparing a collection for curation following field investigations, further consultation with repository staff may be necessary if the recovery varies from what was discussed in the research design. Such considerations could include the concerns of culturally affiliated groups, emergency discoveries in the field, and other factors.

These guidelines pertain to all archeological material collections and documenting records regardless of their origin. Archeological material collections and their documenting records generated through compliance with historic preservation or environmental laws, regulations, and guidelines must be housed at a museum or repository with the capability to ensure adequate permanent storage, security, and ready access to collections by qualified users by law (see Appendix A for list of federal and state laws).

2 GUIDELINES FOR SUBMITTING COLLECTIONS FOR CURATION

Archeological collections consist of records, which document the history of the project, and materials, which are the artifacts, samples, and other tangible remains collected during the course of a project. Collections may consist of records and materials, or they may consist of records only. Typical types of records and materials are discussed in further detail below.

2.1 Pre-Curation Field Strategies

Archeologists should think about curatorial issues and practices from the very beginning of a project, and consider the following best management practices in the field for the collection, handling, and storage of materials collected and associated project records.

Collections management in the field starts with implementing the field collection and statistical sampling methods presented in the project research design and or/proposal approved by reviewing agencies (ex. a THC reviewer upon application for a Texas Antiquities Permit).

> ***Example of a Data Recovery Collecting Strategy:***
>
> All artifacts, dating, botanical and faunal samples will be carefully collected by vertical and horizontal provenience. Fire-cracked rock (FCR) will be collected only when associated with a cultural feature after thorough documentation, or if it is associated with charcoal or other unique contexts as directed by the crew chief. Samples of feature fill will also be collected. Two samples per feature level will be collected, a 1-liter sample to be processed for further analysis, and a ½-liter sample to be curated for posterity.
>
> Unexpected discoveries at the site may necessitate changes in the collecting strategy and sampling plan. When changes are made, they should be well documented and continue to support the research goals of the project.

An example of a project-specific field curation protocol is also presented in Appendix C.

Reminder: There may be materials either redundant or non-cultural that the Principal Investigator (PI) will want to discard once in the laboratory. THC approval must be obtained prior to such culling in the lab and all sampling and/or discarding must be fully documented and included in the associated records submitted for curation. Please note, that clearly modern items (i.e., less than 50 years old) recovered in the field may be disposed of without consultation with the THC.

2.1.1 *Excavation and Field Conservation*

Excavation changes the environmental conditions that archeological materials are acclimated to. When they are unearthed and exposed to different temperature, relative humidity and lighting conditions, artifacts immediately begin to react to the changes in ways that are both visible and invisible to the archeologist (Sease 1994). Most often these changes lead to rapid object deterioration. Planning for conservation in the field is therefore essential for the long-term preservation of archeological objects. For Data Recovery and Testing projects, it is best to employ a Finds Manager, a site secretary, or appoint a quality control person to serve the ancillary duty of being present onsite during excavations to manage the documentation and artifacts from the field to the lab. It is this person's responsibility to know when a professional conservator is needed, and to consider the following:

- The types of material remains anticipated.
- What types of conservation treatments may be needed in the field.
- Volume and kinds of archival quality storage materials that will be required to stabilize the materials and safely transport the collection from the field to the lab or repository.
- How the material remains can best be collected to facilitate their long-term preservation.
- Choice of excavation tools that may affect the materials and condition of an object; the best tools that will inflict the least harm should be chosen prior to field work.
- A number of factors, such as water, temperature, humidity, and sunlight, affect the stability of an object in the ground during and directly after excavation
- Always assume objects are fragile and immediately cover up an object or a group of objects that seem unstable.
- Contact a professional conservator for advice on *in situ* treatment and methods to remove the object(s).

- Objects should be kept in bags or containers with like materials. Improper mixing can cause damage to some objects (e.g., placing bones or soft ceramics in containers with large and heavy lithics).
- Remember that any procedures applied to an object should be reversible (can be later be removed without any damage to an artifact).
- A professional conservator should always be consulted for complex treatments or if there are any questions about correct conservation procedures. In particular, be sure appropriate adhesives and consolidants are selected.

2.1.1.1 SOIL

- The type of soil in which objects are found can be used to anticipate the condition and conservation needs of the recovered artifacts.
- The chart in **Table 1**, outlines the general preservation of objects in some basic types of soil conditions (NPS 2019a; Sease 1994).

Table 1. Soil chart adapted from Sease (1994) and the National Park Service (NPS 2019a) outlining the general preservation of objects in some basic types of soil conditions.

		Acidic	Alkaline	Saline	Water-logged Acidic	Water-logged Alkaline	Desert	Arctic
	Ceramics	R-calcareous fillers dissolve	P-basic structure affected	P	R	P	G-wind erosion possible	G
	Lithics	G	G	P-soluble salts	P	P-insoluble salt encrustation	G-wind erosion possible	G
	Glass and Glazes	R-alkali leaching	P-basic structure affected	P	R	P	G-wind erosion possible	G
	Wall Plaster	P	G	P	P	P	G	G
	Shell	P	G	P-soluble salts	P	P	G	G
Metals	**Iron**	P-corrosion	G	P-corrosion	G	G	G	G
	Copper Alloys	P-corrosion	G	P-corrosion	G	G	G	G
	Lead	P	P-basic structure affected	R	G	G	G	G
	Silver	P	G	G-slight saline P-high saline	G	G	G	G
Organics	**Bone, Ivory, Antler**	P	G	P-soluble salts	P	P	G	G
	Wool, Leather, Hair	P-deterioration of protein	P	R-dehydration	G	G	G	G
	Wood, Cotton, Linen	P	P	R-dehydration	G	G	G	G

G=Good Preservations; R=reasonable Preservation; P=Poor Preservation

There are many resources on the internet that provide advice on field and lab conservation, as well as links to finding an objects conservator. The best advice is to not do anything and keep the object(s) in equilibrium – if wet, keep wet.

2.1.1.2 PACKAGING

Packaging in the field is often considered temporary, but many times these "temporary" containers end up housing the collections for months or even years. Therefore, only archival quality materials should be used and all exterior containers must be labeled immediately with an attached box tag. Therefore, complete bags should be put away in a larger protective container (properly labeled) and checked throughout the fieldwork until it is transported to the lab. Tyvek tags or paper tags that are protected by their own smaller Ziplock bag can also be placed inside the artifact bags in order to ensure the provenience information remains intact even if the ink fades away. Artifact bags should be 4-mil self-closing zip top bags (same as required for curation). Never use paper lunch sacks or bags that do not close on their own (no string or twisty ties to close bags). Boxes or bins should also be closeable and preferably water resistant.

For most materials, it is often best to keep them stored in similar conditions to how they were buried; acclimation to new conditions should be slow. In general, if the in-situ context is dry, you should keep the objects dry after excavation. Alternatively, if it is damp or wet, slow drying is best. Waterlogged organic materials like wood or bone should be kept wet until a conservator can treat them. Other things to consider include:

- Don't place objects in direct sunlight to prevent condensation.
- If storing objects for long periods before processing, consider opening the bags to dry slowly; however, make sure they are supported and don't fall over spilling their contents.
- Pack objects of different materials separately.
- Don't fill bags too full.
- Don't put heavy objects on top of light ones.
- Make sure objects are well supported if fragile.
- Plan ahead, especially if specialized packing is needed.
- Assemble a field kit.

2.2 Arranging for Curation with an Archeological Repository

In choosing a repository, the archeologist should consider the existence of previously excavated collections, with the aim of keeping collections from the same site together whenever possible. In particular, it is most important that materials be housed in the state of origin. The archeologist should confer with the selected repository as early as possible in the project planning process regarding specific curation guidelines required by that particular facility. All Antiquities Code of Texas permitted state-associated collections must be curated in a repository certified through the THC's Curatorial Facilities Certification Program.

2.2.1 *Letter of Request for Housing*

Texas Antiquities Code permits require that the PI select a final repository for the collection, but only requires proof of acceptance once the collection has been submitted for curation. Nonetheless, a request for housing should be submitted to the repository by the archeologist prior to the preparation of collections. This letter provides advance notice to the repository that the archeologist intends to submit

collections for curation (this might not be necessary in the case of records-only collections). By requesting housing at the start of a project the archeologist will know in advance if the selected repository agrees to take the resulting collection for curation and be able to plan processing of the recovered materials and records kept that fit the curation standards of the repository. Basic information typically included in the letter is:

- Name of submitting archeologist
- Name of sponsoring individual/agency/institution
- Nature of investigation
- Date of investigation
- Project area and/or site(s) location(s)
- A need for housing material and documenting records collections (e.g., a collection may include records only)
- Projected date for curation
- Specifications of ownership and legal responsibilities

Examples:

Texas Archeological Research Laboratory (TARL):
https://liberalarts.utexas.edu/tarl/_files/pdf/tarlcurationform1-rfh-pha-2018-2.pdf
Center for Archaeological Research (CAR):
http://car.utsa.edu/CARCuration/CurationSOPForm.html
Center for Archaeological Studies (CAS):
https://cas.anthropology.txstate.edu/curation/standards-procedures/curation-forms.html

After the archeologist submits a letter of request for housing, the repository will provide a provisional housing agreement. This document is the repository agreement to provide curation for the collection assuming that the repository's curation requirements are met.

2.2.2 *Letter of Transfer/Ownership*

Appropriate documents delineating transfer of ownership or specific custodianship must accompany the collection into curation. These documents let the repository know that the archeologist has the permission of the individual or agency to turn over the collections to the repository for curation. Upon transfer of materials from the archeologist to the repository, the archeologist must submit this transfer of ownership which specifies ownership of the collections to be curated, and clarifies any legal responsibilities to be assumed by the repository.

Examples:

TARL: https://liberalarts.utexas.edu/tarl/_files/tarlcurationform6_transfer_2018.pdf (for a private sponsor) https://liberalarts.utexas.edu/tarl/_files/tarlcurationform7_govt_2018.pdf (for a public agency)
CAR: http://car.utsa.edu/CARCuration/CurationSOPForm.html
CAS: https://cas.anthropology.txstate.edu/curation/standards-procedures/curation-forms.html

2.2.3 *Letter of Acceptance*

The archeologist should ask the repository to provide a letter stating receipt of the collections. Relative to collections made under an Antiquities Code of Texas permit, the "State-Associated Collections Curation Form" serves as the formal letter of acceptance submitted to the THC by the repository in order to satisfy

the PI's curation requirements. A repository is not obliged to provide such a document until accessioning of the collection is completed to the satisfaction of the repository.

2.3 Standards for Preparing Archeological Records

Records submitted for curation should be organized and in good condition. Minimally, records submitted to a repository should be sufficient to document the project and its collections.

Examples of records that may be included are:

- Letter specifying ownership of curated materials
- Copies of correspondence (e.g., research design, antiquities permit, THC concurrence)
- Site form with accompanying USGS map portion showing site location
- Maps and mapping notes (the submission of digital mapping data should be discussed in advance with the repository)
- Daily journal
- Survey or excavation notes
- Photographic log
- Photographs (e.g., prints and negatives, color slides, infra-red, digital images)
- Explanation of cataloging system used
- Field catalog of specimens
- Catalogue or itemized specimen inventory
- Analysis notes
- Digital data (coordinate acceptable formats with repository)
- Transcripts, tapes; oral/historical documentation
- Copies of historic documents
- News clippings, miscellaneous published materials
- Financial and budget records
- Bibliographic records
- Final report: pdf and hard copy versions (redacted and unredacted versions)

While each repository will have its own policies and procedures for the organization of records, all archeologists should:

1) Include original documents unless an alternate agreement has been reached with the repository. All curated records must be on archivally stable (lignin-free, acid-free) material and must be in archivally stable folders or binders, as appropriate. Large individual records such as maps and profiles are to be on archivally stable paper or polyester film and in archivally stable folders.

2) Review all records submitted for curation before submission to ensure that they are legible and reproducible, particularly if they are handwritten or in pencil. Special care should be taken to ensure that secondary documents (typed or rewritten) are accurate.

3) Include, as minimum documentation of a site, a completed site form and the location shown on a USGS topographic map (1:24,000). The form can be the printout from TexSite. Provide Universal Transverse Mercator (UTM) coordinates (note which North American Datum [NAD] is used), at least to site centerpoint, or latitude and longitude if no UTM ticks are marked. The map plotting should indicate the approximate extent of a site and note any possible continuations. If a site is part of a survey, unless the project contract specifies otherwise, survey boundaries and coverage should be indicated.

4) Include a comprehensive records, photograph, and artifact recording system in conjunction with the selected repository (e.g., some repositories use consecutive Lot and Photo numbers and must be contacted for the number assignments).

Examples of curation standards for records:

TARL: https://utexas.app.box.com/s/k2tcn9afmncl1zwmkheaubt2ri2vu5w4
CAR: http://car.utsa.edu/CARCuration/CurationSOPForm.html
CAS: https://cas.anthropology.txstate.edu/curation/standards-procedures.html

2.3.1 *Guidelines for Environmental Conditions by Material Type*
(adapted from NPS Museum Handbook, Part I [NPS 2019b])

In this section we concentrate on dealing with wet objects since that is the most common situation. Also the best advice is to slowly dry out objects, never do it quickly and never have the full force of air directed onto the materials.

2.3.1.1 STONE

Dry out damp stone slowly. Unstable (salt-contaminated) stone needs to be kept in a Relative Humidity (RH) below 50%. The humidity level should be kept as stable as possible to avoid further damage by the hydration cycle of the soluble salts. The temperature needs to be at a steady level between 60 and 72 degrees.

2.3.1.2 CERAMICS

Dry out damp ceramics slowly and look for crystallization of salts which can damage the surface. Low fired ceramics are weak when wet, so take care when handling. Similar to unstable stone, keep temperature and RH levels stable.

2.3.1.3 GLASS

Weathered or spalled surfaces are vulnerable to moisture. Controlled humidity at 20–40% is best.

2.3.1.4 METALS

Dry or damp ferrous metals should be stored in a desiccated environment. Silica gel packets and an oxygen free container are the recommended method of desiccation in the field. For iron, the RH should be less than 12%. Nonferrous metals should be stored in a desiccated environment of RH less than 35%. Humidity indicator strips can be used to monitor RH in sealed containers.

2.3.1.5 BONE AND WOOD

Dry out slowly if damp. Never place in direct sunlight to dry. RH should be stable at around 50%. Bone found in archeological contexts is often in poor condition. Be sure to package bone separately from heavier objects and provide sufficient support and padding with archival tissue or polyethylene foam.

2.3.1.6 STORAGE OF SMALL AND/OR FRAGILE MATERIALS

Make sure fragile material is well supported – use acid free tissue or foam. Small objects can be packed in sealable polyethylene bags with added foam or tissue if needed for support. Small finds, like seeds and botanical remains can be stored in polyethylene or polypropylene vials.

2.3.1.7 SPECIAL ANALYSIS SAMPLES

Sample preparation differs with sample material type and technique. Discuss type of analysis to be conducted with the designated repository ahead of time to plan for proper packing. Many dating laboratories offer guidelines for collection and storage on their websites. In general, use materials that will not contaminate samples (ex. place samples in glass vials so not to contaminate with modern materials).

Handle materials with gloves or wear other protective gear to prevent contamination if necessary (ex. samples that will undergo residue studies should never be handled without gloves).

2.3.2 *Field Recording*

The records in the field, as well as in the lab, are vulnerable to a variety of environmental threats as well as mishandling. Some general recommendations to follow in the field in order to promote the long-term preservation and viability of the documentation are:

- All records should be written as neatly as possible (make sure you can discern numbers from one another for example) and with a #2 pencil [NO ink!]. Your writing must be dark enough to be clearly photocopied;
- use appropriate long-lived media for all record types; use permanent and archival stock in paper, ink, lead pencil, folders, and boxes;
- inspect and redo damaged or inadequate records;
- label everything, or their containers;
- use appropriate storage for all media in the field in order to protect them from poor environmental conditions and threat of fire or theft;
- carefully consider existing guidelines and equipment for digital and audiovisual media, make sure backup copies and hard copy printouts exist whenever possible (possible exemptions might include remote sensing data); and,
- ensure that project information and data is captured by appropriately knowledgeable staff.

2.4 Standards for Preparing Material Collections

When preparing collections for curation be aware that insects are attracted to any dirt that may be found on objects; mold and mildew thrive in darkness on damp surfaces. All uncleaned specimens should be identified on the inventories and the repository must be consulted before submitting these types of specimens. Specimens must be completely dried after cleaning and before packaging and housing with the relative humidity controlled and sufficient ventilation to ensure air movement to prevent mold and mildew.

Because some specimens are fragile and hygroscopic, material such as bone should never be soaked in any cleaning agent, and it should be allowed to air dry after cleaning. Force-drying causes additional stress, which can damage the specimen. For specimens in good physical condition: dust or lightly brush

off surface dirt. Additional cleaning may make use of water, acetone, or a similar cleaning agent. Consult with a conservator when unsure of how to proceed.

- Dampen surface with a soft brush or cotton swab and rub gently.
- Dry area with a clean cotton swab or soft cotton cloth.
- Allow to air dry; blow dryers or heaters can cause additional stress and cracking.
- Dry completely before storage.

Examples of curation standards for material collections:

TARL: https://utexas.app.box.com/s/k2tcn9afmncl1zwmkheaubt2ri2vu5w4
CAR: http://car.utsa.edu/CARCuration/CurationSOPForm.html
CAS: https://cas.anthropology.txstate.edu/curation/standards-procedures.html

2.4.1 *Labeling*

The catalog number should be small, located in an inconspicuous spot, and placed so as not to obscure any distinctive feature. Never place a label on the retouched edge of a lithic tool, the decorated surface of pottery, or the maker's mark or other diagnostic feature of an artifact. For example, always try to label the ventral (smooth) face of a flake or tool and undecorated or difficult to see portions of pottery. For bifacial lithic items, and for all items where there may be a question, try to label the least "photogenic" surface.

Use a two-coat labeling system to insure reversibility while providing stability and imperviousness to moisture is crucial. While the instructions below assume the use of archival ink for labeling, increasingly very small laser printed tags on archivally stable paper are used instead of handwriting on the artifact. In these cases, place the paper label on a base coat of Paraloid B-72 to adhere the label and use a top coat to seal it.

1) Never write directly on the specimen.
2) Never use fingernail polish, white-out, or other such substance.
3) Apply a base coat of 10% Paraloid B-72 solution for most specimens; use white titanium pigment in B-72 as a base coat for dark-colored specimens. Allow to dry before labeling.
4) Use black India ink, Pigma, or Millennium pigmented pens for the number. (**HINT**: Pigma pen ink tends to dissolve when exposed to the solvent in the B-72.) If the base is a dark color, use white-pigmented ink or use a white-pigmented undercoat prior to labeling with black ink or pigment pens. Allow to dry.
5) Cover the number with a top coat of 10% Paraloid B-72 solution.

Artifacts too small to be labeled

1) Usually sort these artifacts by artifact class or analytic unit.
2) Place in 4-mil polyethylene self-sealing bags (or other archivally-stable containers).
3) Label clearly. Provenience information must be on a tag made of Tyvek or acid-free paper and enclosed in the container.
4) Include information regarding artifact counts and weight totals.

Items not directly labeled: these include organic materials such as human remains, matting, wood, and fur, and deteriorating materials such as metal and flaking/patinated glass or eroding ceramics.

1) Identify with tags of Tyvek or acid-free cardstock for longer life tags.

2) Affix tags without endangering delicate materials. They should not be in direct contact with the material, but may be enclosed in a poly bag or inserted between double bag enclosures (check with repository).
3) Treat small items in this category as described above.

Illustrated or photographed artifacts

1) Consider identifying artifacts illustrated or photographed in reports and/or publications. Typically these should not be separately housed, but kept with the appropriate analytical groups that they represent. However, coordinate with the curatorial repository beforehand to verify their requirements.
2) The information that an artifact portrays in an illustration should be noted in the associated document catalog; reference to the report and the figure number is helpful.

2.4.2 *Packaging*

- Specimens should not be allowed to roll loosely, bump into each other, or be stacked on top of each other in their container except with certain categories of bulk materials (e.g., burned rock).
- All packaging should be done with acid-free materials, lignin-free materials, or polyester/polyethylene/polypropylene materials. Poly bags should be 4-mil.
- Padding or a similar protective barrier should be used as needed to protect individual specimens within a larger container.
- Avoid packing heavy and light/fragile items in the same box.

Additional details concerning packaging materials:

All packing materials must be archivally stable and acid-free. The materials listed below are some of the most common items used for packaging:

Acceptable Materials: · Acid-free corrugated board and mat board, preferably unbuffered · Clear, polyethylene self-closing plastic bags without pleats · Clear, polyethylene plastic containers · Unbuffered, acid-free cardboard boxes, various sizes · Unbuffered, acid-free tissue paper · Polyethylene foam, preferably foamed with nitrogen · Polystyrene – rigid boxes only · Unbleached muslin, washed 5 or 6 times to remove sizing · Silica gel (packaged)

Unacceptable Materials: · Colored or clear plastic bags with pleats and/or twist ties · Colored plastic containers · Plastics containing PVCs · High acid content or buffered cardboard boxes · High acid content or buffered tissue paper · Paper towels · Newspaper · Any acidic paper products · Glass containers · Rubber bands · Pressure sensitive tapes (scotch, masking, mailing, etc.) · Bubble pack · Cotton Wool · Polystyrene peanuts or beads

Non-archival quality pressure-sensitive tape (e.g., scotch, masking, strapping) fasteners and glues should never be used on documents. Any material in contact with paper records should be of archival quality, reversible, non-yellowing and should not cause damage to the paper.

2.4.3 *Conservation*

Any conservation treatment should be done in consultation with the repository. Items in very fragile condition should be inspected and treated by a competent conservator. In any conservation procedure, all work should be reversible both in the short-term and long-term.

Adhesive: use a reversible mending agent such as Paraloid B-72.

1) Coat the edges of the break with a 10% Paraloid B-72 solution and allow to dry.
2) Apply a 20–25% Paraloid B-72 solution as an adhesive to conjoin the pieces; allow to dry thoroughly.

Consolidant: use a reversible product such as Paraloid B-72, but unless you have experience or someone with experience to supervise, this is not advisable.

1) Apply a Paraloid B-72 solution from 1% to 10% depending on condition and porosity.
2) Allow to dry thoroughly.
3) Apply second (or more) treatment(s) if necessary, allowing thorough drying between treatments.
4) Conservation treatment records should be maintained as part of the documentation of the specimen.

2.5 Checklist for Submitting Archeological Material Collections

Material collections submitted for curation should be organized and in good condition. Archeological materials submitted for curation could include the following categories:

- Ceramics (e.g., vessels, figurines, sherds, pipes)
- Lithics (e.g., stone tools, debitage, burned rock, comparative materials)
- Glass (e.g., window panes, bottles)
- Metal (e.g., nails, armaments)
- Synthetic materials (e.g., plastic, nylon)
- Faunal materials (e.g., animal osteological, shell, horn)
- Vegetal materials (e.g., charcoal, wood, seeds, pollen, phytolithic, matting, basketry)
- Human remains

It is held that, with only rare exceptions, material collections to be housed have been analyzed, and therefore artifact cleaning, cataloging, preservation, and site-specific specimen-level inventories have been completed according to established guidelines. While specific handling guidelines are formulated by each repository, all repositories require an archeologist to see that:

- Material collections are accompanied by all documenting records, including any analysis records.
- An explanation of the cataloging system is provided.
- While proper cleaning is expected for most items collected, there may be specimens for special studies where cleaning would compromise or change the results of the study. These items should be identified, separated from other collected material, and omitted from the usual cleaning process. The repository should be informed of this on the request for housing form. If the items are being kept for future prospective tests and will be coming into curation in an unwashed state, this status must be reflected in the records (inventories, packing documents and labels). **All other materials** are to be cleaned and preserved using appropriate reversible, nondestructive techniques. The materials should be accompanied by documents listing these techniques, and the records adjusted to document the items singled out for special studies.
- Specimens needing ongoing conservation are separated and documented. If ongoing preservation costs are not included in the initial fee, additional charges may be assessed.
- All specimens are labeled in accordance with the accessioning, cataloging, and labeling systems of the repository.

- Unless alternate arrangements have been made with the repository, all specimens should be labeled (indelible stamp, India ink, etc.) with a site designation and intrasite provenience. Specimens too small to be numbered and/or large groups of similar specimens retaining original provenience groupings are to be placed in labeled containers to ensure against loss of provenience and/or analysis groupings.
- Fabric or paper tags should be affixed to perishable or fragile specimens that are not to be directly marked upon.
- Tags in bulk samples (e.g., matrix, soil, burned rock) should be enclosed in small plastic bags within bags, or placed in another bag with the tag between the two plastic bags.
- Follow the facility's guidelines of labeling boxes. Some will affix their own tags.
- All paper labels and tags should be acid- and lignin-free.
- Labels in or on containers should provide the following information: site designation, project name and date, provenience data, and analytical group; some repositories also include number of specimens contained within.
- The quantity of bulk samples (e.g., matrix, soil, burned rock, etc.) to be curated is set before submission to the repository. These determinations should consider the potential of samples and specimens for future research and to the limited space for housing in most repositories. Sampling is highly recommended.
- All artifact bags are polyethylene plastic bags, rather than paper bags, in accordance with the packaging system of the repository.
- The use of plastic or cardboard containers in addition to plastic bags is considered when they are appropriate for protection, separation, and/or future use of the collections. Boxes should be sturdy and should fit the size/shape requirements of the repository. The repository may provide the boxes to facilitate submission.
- Following analysis, analytical categories are maintained and **not disassembled**.
- If unusual circumstances exist and a collection is not analyzed, it is packaged according to its field provenience and accompanied by a corrected and updated field catalog.
- A specimen inventory or catalogue accompanies each collection. This inventory must accurately reflect the quantity of material, the analysis, and packaging order. Analytical group designations on inventories should correspond to those used in the final report and on packaging labels.
- Collections should be hand transported to the repository, if at all possible. Where shipping is unavoidable, wrap and pad artifacts to withstand impacts and use a carrier with a tracking system. The box-within-a-box packaging method is preferred. If materials must be shipped, contact the repository in advance for guidance and inform them of the date the materials are shipped and expected delivery date.

3 GUIDELINES FOR TREATMENT OF HUMAN REMAINS

Human remains and objects associated with funerary practices that are either intentionally excavated and deposited for curation or identified in extant collections through consultation must be handled with respect, cared for, and preserved during temporary and/or long-term housing. **Human remains and associated funerary objects should always be in kept in a secure, nonpublic area away from activity.** Where cultural affiliation is known or suspected, consultation with the appropriate group or descendants may identify special handling or housing requests that the curation facility will do its best to accommodate. Ideally, consultation should be done before field investigations commence whenever finding human remains is a possibility.

After excavation, it is important that individuals are kept together and not commingled. In the same way, the remains of a given individual and their associated funerary objects should be kept together (or physically nearby) for temporary and/or long-term housing.

3.1 Cleaning

Human remains are fragile and hygroscopic (attract moisture from the atmosphere). Poorly preserved human remains should not be washed. Always consult with a bioarcheologist or bone conservator for post-excavation treatment. Temperature and humidity fluctuations should be avoided. The archeological lab director/manager may consider having the bioarcheologist or osteologist do the final cleaning.

- Loose earth and dust can be removed by careful, soft brushing and not require washing.
- If necessary, washing should be done with extreme care using lukewarm water to dampen soft brushes and sponges.
- Never completely immerse bone or allow it to become saturated.
- Water should be changed after each individual and frequently when fouled.
- Take care not to damage tooth enamel or to remove deposits of dental calculus; always use a damp sponge, never use a brush.
- Handle the cranium with particular care and ensure that all soil is removed from its interior; soil left in any hollow bones will shrink and harden, causing considerable damage.

3.2 Drying

Once the remains have been dry brushed or washed, dry completely at room temperature and out of direct sunlight and away from hot light sources, ultraviolet lighting, ventilation or heat ducts, exterior walls, and windows.

- Bones should be laid out to dry in such a way as to minimize the possibility of the remains of different individuals being mixed.
- Never apply preservative agents, consolidants, varnish, glue, or adhesive tape to human material. Painter's tape has been shown to hold during analysis and is easily removed without damage to the surface of the bone.

3.3 Cataloging and Labeling

- Do not write directly on the bones or associated funerary objects.
- Use an acid-and lignin-free paper label or other archival labeling material (e.g., Tyvek tags).
- Attach label inside and outside of the bag or other packaging.

3.4 Packaging

- If at all possible, requests by descendant groups bearing on packaging and housing of human remains should be accommodated.
- Bones must be completely dry before they are packaged.
- Ideally keep human remains and funerary objects from a single individual burial together.
- Bones should be individually wrapped securely with enough padding to prevent damage.
- Padding or a similar protective barrier should be used to protect individual bones that are stored within a larger container.

- Ensure that the bones cannot fall out of bags or boxes and become lost or commingled.
- All packaging and padding should be done using acid-and lignin-free or polyester/polyethylene/polypropylene materials.
- While it is best to avoid stacking containers that hold human remains, it can be done if the boxes are sturdy and descendant groups are not adverse.
- Human remains and associated funerary objects should always be in kept in a secure, climate-controlled, nonpublic area away from activity.

4 NEGATIVE FINDINGS PROJECTS

Archeologists are encouraged to submit complete collections of records resulting from negative findings projects, that is, archeological projects that do not record any new sites, revisit or reassess existing sites, collect any archeological material from sites, or collect individual finds. However, archeologists may choose to abide by the following requirements in lieu of submitting complete records-only collections from Negative Findings Projects for curation. Submissions are further dependent on the repository's rules when they deviate from the items enumerated below:

1) Archeologists will submit to a designated curatorial facility for curation, one hard copy and one digital copy of the final report (note some repositories might require two hard copies of final reports). In addition to the CTA Guidelines for CRM Short Reports, final reports must:

    a) Include copies or scans of field forms generated during the project attached to the report as an appendix. These field forms must include at a minimum: a subsurface testing log indicating the locations and results of any and all shovel tests, auger holes, or backhoe trenches; and any field notes or daily journals. The appendix should be included in both the review draft and the restricted final draft sent to the THC;
    b) be accompanied by the signed request for housing and letter of transfer form(s);
    c) minimally provide enough photos to adequately depict field conditions and an associated photo log. These photos should minimally include general project area views, representative pictures of shovel tests, pictures illustrating major disturbances, and photos of the survey crew working on the project. Photos not included in the report should be noted in the photo log; and,
    d) include copies or scans of all project correspondence records, including coordination/notification letters and proposals as appendices.

Only reports meeting these requirements will constitute the complete record of the survey.

2) Original records may be retained indefinitely or discarded by the permit holder under the disposal rule provided in Title 13, Part 2, Chapter 26, Subchapter C, Rule 26.17 (f).

5 CONSIDERATIONS FOR COLLECTIONS-BASED RESEARCH

The security and safety of state-associated collections is of utmost importance. Controlled access to state-associated collections by employees, researchers, and the public limits the opportunities for theft and destruction to objects, samples, documentation, and historical items. Strict collections access aids in the control of human traffic in storage areas. State-associated collections are not open to the general public on a walk-in basis. The information on the location and nature of archeological sites on land or under waters belonging to the State of Texas or any political subdivision of the State is not available to the general public.

Research on state-associated collections is for the benefit of the people of Texas and the discipline. Requests for access to state-associated collections retained by the THC for care and management should go to the THC. Requests for access to state-associated held-in-trust collections should go to the appropriate curatorial facility. Final reports for all TAC permitted archeological investigations should list the final repository for the associated Held-In-Trust collection in the management summary and/or abstract sections. The final repository should also be listed on the Texas Sites Atlas. If you are interested in accessing or using a curated collection for research or public outreach, the first step is to contact the final repository and familiarize yourself with their Access & Use, loan, and destructive analysis policies and procedures. Please be aware that repositories require a review and approval of the research design and/or proposal as stated in the THC's certification standards when considering any destructive analyses. Due to the amount of time needed for accessing and pulling collections, documenting the analyses, and additional reporting to the THC in the annual report, these repositories may charge an access and use fee. It is also appropriate for agencies that will require comparative analyses that involved long-curated collections to consider contacting the repository before the contracts are written to assure collections can be accessed.

Access may be denied based on endangerment to the state-associated collection or objects, samples, documentation, or historical items or their unavailability due to not being accessioned or cataloged, out on loan, or inadequate research design. If access is approved, it is your responsibility to talk with the repository staff about the way the collection needs to be returned so that the collection is in better shape than in which it was found. This is especially important for legacy collections or collections needing rehabilitation including any collection that has been in curation since before the 2005 Certification Program was initiated.

6 BIBLIOGRAPHY

National Park Service (NPS)

2019a Managing Archeological Collections. Available at https://www.nps.gov/archeology/collections/field_pr.htm. Accessed March 2019.

2019b NPS Museum Handbook, Part I: Museum Collection. Available at https://www.nps.gov/museum/publications/MHI/mushbkI.html. Accessed March 2019.

Sease, Catherine

1994 *A Conservation Manual for the Field Archaeologist*, 3rd edition. Archaeological Research Tools 4. Los Angeles: UCLA Institute of Archaeology.

APPENDIX A

Federal and State Laws

Federal Laws

Antiquities Act of 1906 provides for the protection of historic, prehistoric, and scientific features located on federal lands. It authorizes the President to designate as National Monuments historic and natural resources of national significance located on federally owned or controlled land. The Secretaries of the Interior, Agriculture, and Defense are authorized to issue permits for archeological investigations on lands under their control to recognized educational and scientific institutions for the purpose of systematically and professionally gathering data of scientific value.

http://www.nps.gov/archeology/tools/laws/AntAct.htm

National Park Service Act of 1916 establishes the National Park Service to manage our nation's parks and to "conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such a manner and by such a means as will leave them unimpaired for the enjoyment of future generations."

https://www.nps.gov/grba/learn/management/organic-act-of-1916.htm

Historic Sites Act of 1935 establishes as a national policy preservation for public use of historic sites, buildings, and objects. This act led to the eventual establishment within the National Park Service of the Historic Sites Survey, the Historic American Building Survey (HABS), the Historic American Engineering Record (HAER), and the National Historic Landmarks Program.

http://www.nps.gov/history/local-law/FHPL_HistSites.pdf

Curation of Federally-Owned and Administered Archeological Collections (36 CFR Part 79)

http://www.nps.gov/archeology/tools/laws/36CFR79.htm http://www.nps.gov/archeology/tools/36CFR79.htm http://www.nps.gov/archeology/collections/laws_04.htm

Reservoir Salvage Act of 1960 provides for the recovery and preservation of "historical and archaeological data (including relics and specimens)" that might be lost or destroyed in the construction of dams and reservoirs.

https://www.usbr.gov/cultural/ReservoirSalvageAct1960.pdf

National Historic Preservation Act of 1966, as amended, establishes a program for the preservation of historic properties throughout the United States. It created the National Register of Historic Places, State Historic Preservation Offices, and the Section 106 Review Process.

http://www.nps.gov/history/local-law/FHPL_HistPrsrvt.pdf
http://www.nps.gov/archeology/tools/laws/NHPA.htm

Department of Transportation Act of 1966, Section 4(f) states that the Secretary of Transportation shall cooperate and consult with the Secretaries of the Interior, Housing and Urban Development, and Agriculture, and with the States in developing transportation plans and programs that include measures to maintain or enhance the natural beauty of the lands traversed. The Secretary of Transportation shall not approve any program or project that requires the use of land from a public park, recreation area, wildlife and waterfowl refuge, or historic site unless there is no feasible and prudent alternative.

https://www.faa.gov/about/office_org/headquarters_offices/apl/environ_policy_guidance/policy/faa_nepa_order/desk_ref/media/5-dot-act-section4f.pdf

National Environmental Policy Act of 1969 declares that it is a federal policy to "preserve important historic, cultural, and natural aspects of our national heritage. It requires federal agencies to use a systematic and interdisciplinary approach that incorporates the natural and social sciences in any planning and decision making that may impact our environment.

https://www.fws.gov/r9esnepa/RelatedLegislativeAuthorities/nepa1969.PDF

Archaeological and Historic Preservation Act of 1974 amends the 1960 Reservoir Salvage Act by providing for the preservation of significant scientific, prehistoric, historic and archeological materials and data that might be lost or destroyed as a result of flooding, the construction of access roads, relocation of railroads and highways, or any other federally-funded activity that is associated with the construction of a dam or reservoir.

http://www.nps.gov/archeology/tools/laws/AHPA.htm

American Indian Religious Freedom Act of 1978 states that it is a policy of the United States to protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions of the American Indian, Eskimo, Aleut, and Native Hawaiians, including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonial and traditional rites.

http://www.nps.gov/history/local-law/FHPL_IndianRelFreAct.pdf

Archaeological Resources Protection Act of 1979 defines archeological resources as any material remains of past human life or activities that are of archeological interest and at least 100 years old, requires federal permits for their excavation or removal and sets penalties for violators.

http://www.nps.gov/history/local-law/FHPL_ArchRsrcsProt.pdf
http://www.nps.gov/archeology/tools/laws/ARPA.htm

Abandoned Shipwreck Act of 1987 asserts United States Government ownership of three categories of abandoned shipwrecks: those embedded in a state's submerged lands; those embedded in coral formations that are protected by a state; and those located on a state's lands that are included or are eligible for inclusion in the National Register of Historic Places. The law then transfers title for most of the shipwrecks to the respective states and stipulates that states develop policies to protect the shipwrecks.

http://www.nps.gov/history/local-law/FHPL_AbndShipwreck.pdf
http://www.nps.gov/archeology/tools/laws/ASA.htm

Native American Graves Protection and Repatriation Act of 1990 gives ownership and control of Native American human remains, funerary objects, sacred objects and objects of cultural patrimony that are excavated or discovered on federal land to federally-recognized American Indian tribes or Native Hawaiian organizations. The law also establishes criminal penalties for trafficking in human remains or cultural objects, and requires agencies and museums that receive federal funding to inventory those items in their possession, identify any descendants, and consult with appropriate tribes about repatriation.

http://www.nps.gov/archeology/tools/laws/NAGPRA.htm

Executive Order 13007, Indian Sacred Sites, 1996 instructs all federal land management agencies, to the extent practicable, to accommodate access to and ceremonial use of Indian sacred sites by Indian practitioners and to avoid adversely affecting the physical integrity of those sacred sites.

https://www.energy.gov/sites/prod/files/EO%2013007%20Indian%20Sacred%20Sites.pdf

Texas State Rules, Regulations, and Codes

Antiquities Code of Texas (Amended Sept. 1, 1997) was adopted in 1969 and gave protection to all cultural resources, historic and prehistoric, within the public domain of the State of Texas. The Antiquities Code assigns the Texas Historical Commission as the legal custodian of these resources. Under the Antiquities Code the THC issues permits to conduct archeological investigation of cultural resources to qualified individuals and institutions who demonstrate the capability and willingness to obtain the maximum scientific archeological and educational information from such investigation. In addition, in Chapter 29 the THC, through the CFCP process, also regulates those facilities that can hold state-associated collections generated under and Antiquities Permit.

https://www.thc.texas.gov/public/upload/images/AntiqCode.pdf

Rules of Practice and Procedure for the Antiquities Code of Texas

https://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=4&ti=13&pt=2&ch=26

Texas Administrative Code Title 13, Part II, Chapter 25 Rule 25.6—Collections

https://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=13&pt=2&ch=25&rl=6

Texas Administrative Code Title 13, Part II, Chapter 29—Management and Care of Artifacts and Collections

https://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=4&ti=13&pt=2&ch=29&rl=Y

APPENDIX B

Useful Terms

Accessibility – The capability of records/collections to be easily and quickly located, organized and indexed/cleaned and cataloged, and be usable by someone other than the original investigator.

Accessioning – The process of transferring title, ownership, or stewardship from the providing source (fieldwork, purchase, gift, transfer, etc.) to the repository/museum.

Accession number – A tracking number unique to a group of incoming collection objects/records, whose purpose is identification, not description; the most common form is the year and order in which the collection is accessioned (e.g., 1997-1).

Accredible standards – Currently acceptable practices and procedures that are greater than minimal; periodically upgraded.

Acid-free – Refers to paper or paper-board products having a chemical pH of 7.0 or higher; loosely-used term referring either to neutral pH or alkaline-buffered materials. However free of acid a paper may be immediately after manufacture, over time the presence of residue chlorine from bleaching, aluminum sulfate from sizing, or pollutants in the atmosphere may lead to the formation of acid unless the paper or board has been buffered with an alkaline substance.

Acid-free alkaline-buffered – Refers to paper or paper-board products to which various alkalines have been added to neutralize acids or serve as an alkaline reserve for the purpose of counteracting acids that may form in the future. Packaging in such materials creates a safety barrier against the migration of acids both into and out of an object. Cellulosic materials (paper, cotton, linen, etc.) require alkaline-buffered or inert surroundings (wrappings, packaging, boxing, etc.).

Acid-free neutral – Refers to paper or paper-board products that have a chemical pH of 7.0, neither acidic nor alkaline. Proteinaceous materials (wool, silk, hair, leather, feather, etc.) require neutral or inert surroundings, as do most photographic materials.

Acquisition – The act of gaining physical possession of an object, specimen, or sample and associated records.

Acryloid B-72 (or Paraloid B-72) – An acrylic resin (polymethyl acrylate/polyethyl methacrylate copolymer) used as an adhesive or a consolidant; stable and soluble under normal conditions (environmentally-controlled); recommended uses include metals (silver and iron), textiles, lacquer work and wood. Acrylates are known to cross-link (become irreversible) with ultraviolet exposure.

– Chemically an ethyl methacrylate co-polymer, Paraloid B-72 is a durable and non-yellowing acrylic polymer used for consolidating wall paintings (1-5%), fragile wood (5-20%), etc. It may be used as a fixative when diluted with a solvent to secure markings on artifacts and as an adhesive (50%+) for a variety of substrates. Paraloid B-72 is soluble in acetone, toluene, and isopranol.

Archival/Archivally sound/Archivally stable – A non-technical term that suggests that a material or product is permanent, durable, or chemically stable and, therefore, can be used safely for preservation purposes.

Associated funerary objects – Objects that, as a part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later, and both the remains and associated funerary objects are presently in the possession or control of a

Federal agency or museum, except that other items exclusively made for burial purposes or to contain human remains shall be considered as associated funerary objects.

Blueboard – Refers to acid-free, lignin-free corrugated board used for packaging and housing material (boxes, supports, etc.).

Cataloging – Assigning an object to an established classification system and initiating a record containing identification, provenience, accession and catalog numbers, and location of that object in the collection housing area; each object in a group may be assigned a unique number.

Collection – A related group of objects or specimens and associated documents and data in the care of a repository/museum.

Collections Management Policy – A detailed written statement that explains why a repository/museum is in operation and how it goes about its business. It articulates the repository/museum's professional standards regarding objects and records left in its care. It serves as a guide for the staff and a source of information for the public.

Collections Manager – (see also ***Curator***) A person who possesses knowledge, experience and demonstrable competence in collections care and maintenance including archival methods and techniques appropriate to the nature and content of the collection. A collection management professional should, as a minimum, have experience in collection management and a graduate degree from an accredited institution in anthropology, history, museum studies, or related discipline, or equivalent experience.

Conservation – The treatment of an object to return or enhance its chemical or physical stability; uses interventive methods. Conservation is different from restoration, which is the process of returning an object to its original or previous condition or appearance mainly for aesthetic purposes.

Conservation report – Written report describing the current state of a collection object; includes information regarding the object's provenience, description, and general condition; may include a rough sketch or a photograph of the object. This type of report is ideally done when an object first enters a collection, and thereafter, if it is exhibited, loaned, needs conservation care, etc.

Conservator – A specialist, educated and trained in the preservation and treatment of physically or chemically unstable objects.

Culturally sensitive materials – Objects or materials including human remains whose treatment or use is a matter of profound concern to living peoples who can demonstrate cultural affiliation. Other sensitive components of a collection may include notes, books, drawings, other artworks, photographic media, depictions of human remains, religious objects, and sacred or religious events, and other images relating to culturally sensitive materials.

Curation/Curatorial Services – Managing and preserving a collection according to professional museum curation and archival practices, including, but not limited to:

- Accessioning, inventorying, cataloging, and labeling a collection;
- Handling, cleaning, stabilizing, and conserving a collection in such a manner to preserve it;
- Identifying, evaluating, and documenting a collection;
- Housing and maintaining a collection using appropriate methods and containers, and under appropriate environmental conditions and physically secure controls;
- Periodically inspecting a collection and taking such actions as may be necessary to preserve it; and

- Providing access and facilities to study a collection.

Curator – (see also ***Collections Manager***) A specialist educated in a particular academic discipline relevant to the repository/ museum's collections and trained in collections care and maintenance. The Curator is directly responsible for the care and academic interpretation of all objects, materials, and specimens belonging to or lent to the repository/museum; makes recommendations for acquisitioning and deaccessioning; is responsible for attribution, authentication, and research on the collections and the publication of the results of that research. The Curator also has administrative and (if appropriate) exhibition responsibilities and should be sensitive to sound conservation practices; makes policy in all of these areas

Deaccessioning – The process of legally removing objects from a repository/museum's collections.

Documenting or Associated Records – Original records that are prepared, assembled, and document the efforts to locate, evaluate, record, study, preserve, or recover a prehistoric or historic resource. Some records such as field notes, artifact inventories, and oral histories may be originals that are prepared as a result of the field work, analysis, and report preparation. Other records such as deeds, survey plats, historical maps and diaries may be copies of original public or archival documents that are assembled and studied as a result of historical research. Classes of documenting records (and illustrative examples) that may be in a collection include, but are not limited to:

- Records relating to the identification, evaluation, documentation, study, preservation, or recovery of a resource (such as site forms, field notes, drawings, maps, photographs, slides, negatives, films, video and audio cassette tapes, oral histories, artifact inventories, laboratory reports, computer cards and tapes, computer disks and diskettes, digital data, printouts of computerized data, manuscripts, reports, and accession, catalog, and inventory records);
- Records relating to the identification of a resource using remote sensing methods and equipment (such as satellite and aerial photography and imagery, side scan sonar, magnetometers, sub-bottom profilers, radar, and fathometers);
- Public records essential to understanding the resource (such as deeds, survey plats, military and census records, birth, marriage and death certificates, immigration and naturalization papers, tax forms, and reports);
- Archival records essential to understanding the resource (such as historical maps, drawings and photographs, manuscripts, architectural and landscape plans, correspondence, diaries, ledgers, catalogs, and receipts); and
- Administrative records relating to the survey, excavation, or other study of the resource (such as scopes of work, requests for proposals, research proposals, contracts, antiquities permits, reports, documents relating to compliance with Section 106 of the National Historic Preservation Act (16 U.S.C. 470f), and National Register of Historic Places nomination and determination of eligibility forms, curation documents and agreements).

Federally-associated collections – Archeological collections excavated on Federal lands and Held-in-Trust for the Federal government by designated repositories/museums.

Finds Manager – A person (lab manager [or equivalent] or someone appointed by the lab manager) present onsite during excavations to manage the documentation and collection, packaging, and transport of artifacts and samples from the field to the lab. It is this person's responsibility to know when a professional conservator is needed.

Flammable liquids – Solvents such as ketones (acetone), alcohols, benzines; should be stored in a fireproof (e.g., concrete-lined) cabinet, closet, etc. Labels on containers for all liquids used should be checked for such warnings, and those liquids found to be flammable should be stored appropriately.

Flammable materials – Any materials capable of being ignited easily and of burning with extreme rapidity; should be stored in fire-proof storage area (same as flammable liquids above).

Heating, Ventilation, and Air-Conditioning system (HVAC) – A ducted system that controls temperature, relative humidity, and possibly pollution (gaseous and particulate). The system includes fans with heating and cooling elements mounted in air handlers, humidifiers and/or dehumidifiers, screen filters for filtering particulates (dust), and vapor-phase filters (charcoal, etc.) for filtering gases. HVAC systems range from top-of-the-line systems that accomplish all of the above to ordinary heater/air conditioners similar to those found in residences.

Held-in-Trust collections – Collections generated from public lands that have Federal or State ownership.

Housing – Safe, appropriate containers, furniture, and fittings within which collections are placed for long term storage and preservation.

Human remains – Osteological remains of the species Homo sapiens.

Humidity card indicators – Paper cards that change color as the relative humidity changes.

Hygroscopic – A material that absorbs or attracts moisture from the atmosphere.

Inert – Refers to products made of non-reactive, chemically stable materials that are not easily decomposed; these materials, such as polypropylene or polyethylene, have no pH value.

Inventory – A physically-checked, itemized list of the objects in a repository/museum's collections.

Letter of Acceptance – A document from the repository/museum stating acceptance of collections and indicating that the Submitting Archeologist has met minimum curation obligations.

Letter of Request for Housing – A document from a Submitting Archeologist to a repository/museum requesting that the facility curate the materials from a specified project/collection; it provides basic information describing the history of that project/collection.

Letter of Transfer/Ownership – Documents the transfer of ownership or specific custodianship of a collection being curated.

Lig-free or lignin-free – Refers to products that are acid-free and have had the lignin removed. Lignin is a naturally-occurring organic acid that acts as a binding agent in woody plants. It is easily oxidized, resulting in yellowing, embrittlement, and weakening of the products. Lignin has been replaced by alpha-cellulose, a stable form of cellulose derived from cotton.

Material Collections – Artifacts, objects, specimens, samples, and other physical evidence that are excavated or removed in connection with efforts to locate, evaluate, document, study, preserve or recover a prehistoric or historic resource. Classes of material remains (and illustrative examples) that may be in a collection include, but are not limited to:

- Components of structures and features (such as houses, platforms, enclosures, terraces, fortifications, mounds, and pieces of shipwrecks ship's hull, rigging, armaments, apparel, tackle, contents, and cargo);

- Components of petroglyphs, pictographs, or other works of artistic or symbolic representation;
- Intact or fragmentary artifacts of human manufacture (such as tools, weapons, pottery, basketry, and textiles);
- Intact or fragmentary natural objects used by humans (such as rock crystals, feathers, and pigments);
- By-products, waste products or debris resulting from the manufacture or use of man-made or natural materials (such as dumps, cores, and debitage);
- Organic material (such as vegetable and animal remains, and coprolites);
- Human remains (such as bone, teeth, hair, and cremations);
- Environmental and chronometric specimens (such as pollen, seeds, wood, shell, bone, charcoal, tree core samples, soil, sediment cores, obsidian, volcanic ash, and baked clay); and
- Paleontological specimens that are found in direct physical relationship with a prehistoric or historic resource.

Melinex – Archival polyester film from DuPont; dimensionally stable, chemically resistant, non-yellowing (replaces Mylar).

Microfoam – An expanded resin of polypropylene, an inert stable plastic; used for padding of objects in boxes or on shelves.

Mission statement – A written document that states a repository/museum's institutional philosophy, scope, and responsibility.

Museum – A legally-organized and permanent not-for-profit institution, essentially educational or aesthetic in purpose, with professional staff, that owns and utilizes tangible objects, cares for them, and exhibits them to the public on some regular schedule. A museum may have Held-in-Trust collections generated from public lands.

Mylar – A common trade name from DuPont for a polyethylene terephthalate, an inert, chemically stable plastic. Its characteristics include transparency, colorlessness, and high tensile strength. It is commonly used in sheet or film form to make folders, encapsulations, and book jackets.

NAGPRA – Native American Graves Protection and Repatriation Act. This act was adopted in 1990 (amended in 2010) and requires any federally-funded institution (except the Smithsonian) to inventory collections, develop a list of all human remains and sacred objects for federally-recognized Native American groups. The institution files this list with the Department of the Interior for review by Native American and Hawaiian groups. If an institution is involved with NAGPRA, researcher access, inventorying, and deaccessioning procedures may be affected by NAGPRA.

Negative Findings Projects – Archaeological projects that do not record any new sites, revisit or reassess existing sites, collect any archaeological material from sites, or collect individual finds.

Nitrate negative – An unstable cellulose-based film whose degradation and extreme flammability can harm or destroy photographic collections; long-term preservation of a collection of cellulose-based film negatives would be a frost-free freezer.

Packaging – Archival-quality materials within which objects are surrounded, contained, and enclosed for long term storage and preservation.

Perpetuity – When applied to certain materials bequeathed to or accepted by a repository/museum, to be held and cared for forever.

Polyethylene – An inert, chemically stable, highly flexible, transparent or translucent plastic; comes in the form of sheeting or bags.

Polypropylene – A thermoplastic polymer used in a wide variety of applications, including packaging, textiles, laboratory equipment, plastic parts, and reusable containers of various types; it is rugged and unusually resistant to many chemical solvents, bases and acids. For archival purposes, it is relatively rigid when in its untreated (oriented) sleeve format, soft when surface-treated in its binder storage pages format.

Preventive conservation – Non-interventive collection care to minimize conditions that may cause damage; includes maintaining proper environmental controls, screening for air-borne particulates, monitoring for pests, and stressing proper handling and good record-keeping.

Provisional Housing Agreement – A written agreement between a repository and a submitting archeologist stating conditions under which the repository will accept and curate the materials from a project turned in for curation by the submitting archeologist.

PVA (or PVAC) – The copolymer polyvinyl acetate. It is a colorless transparent plastic, widely used in years past both as an adhesive and consolidant based on the formula selected. It comes in bead form and is mixed with a liquid carrier (solvent such as acetone). Conservators no longer recommend PVA. Acryloid (Paraloid) B-72 is the appropriate replacement for PVA.

Repatriation – The return of culturally sensitive materials to concerned parties. Repatriation is a collaborative process between scientists and concerned parties in their attempts to interpret and protect people and cultures with respect, dignity, and accuracy. Repatriation is a partnership created through dialogue, cooperation, and mutual trust. The intent of NAGPRA is repatriation.

Repository – A permanent, not-for-profit education or research-oriented agency or institution that provides in-perpetuity legal housing and curation of records and material collections.

Research Design – A written plan that provides the rationales, goals, and methods for investigations of archeological sites including, but not limited to:

- The scientific and anthropological reasons for pursuing the proposed investigation;
- Hypotheses to be tested and the questions to be asked of the data; that is, what the investigator hopes to determine about past human activity, including such items as occupational sequence, settlement patterns, subsistence strategies, chronology, trade and social networks, alliances, etc.;
- The explicit manner in which data will be collected and analyzed, and how these relate to the research goals;
- Plans for consultation with affiliated Native Americans, and/or other cultural groups;
- Inferential techniques to be used to interpret the data; and schedule and work effort estimates.

Reversible – Able to return to a previous state. A process that can be undone; a method of treating or coating an object that is not permanent and can be removed without damaging the item.

Sacred objects and objects of cultural patrimony – Specific items that are needed by traditional religious leaders for the practice of an ongoing religion by present-day adherents.

Scope of collections – Defines the purpose of a repository/museum's collection and sets agreed-upon limits that specify the subject matter, geographic location, and time period to which the collections must relate.

Trinomial Smithsonian Institution Site Designation System – Provides a state number, then a county abbreviation, and finally a sequential number that identifies a particular site recorded in the county. For example, 41LU1 (Lubbock Lake Landmark): "41" designates the state of Texas; "LU", stands for Lubbock County; and "1" indicates the first site in Lubbock County recorded with the Texas Archeological Research Laboratory at The University of Texas at Austin (state repository for site forms).

Specimen-level inventory – A specimen-level inventory should be project- and site-specific and include:

- Trinomial (and field/temporary site number, if used);
- Lot/catalog number;
- Description of materials and quantity;
- Provenience, including horizontal and vertical values, as well as unit, feature, shovel test, notations, as appropriate;
- Date of collection; and
- Names of collectors and names of catalogers.

Stabilization – Treatment of materials to prevent or greatly limit continued deterioration.

State-associated collections – Archeological collections excavated from State lands

Systematic – Using a methodical and thorough set of guidelines and procedures to gather archeological collections, to house and document archeological records and material collections, etc.

Tyvek – A trade name for a form of polyethylene sheeting; used for wrapping, lining drawers, interleaving, or draping open shelves.

Unassociated funerary objects – Objects that, as a part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later, where the remains are not in the possession or control of the Federal agency or museum and the objects can be identified by a preponderance of the evidence as related to specific individuals or families or to known human remains or, by a preponderance of the evidence, as having been removed from a specific burial site of an individual culturally affiliated with a particular Indian tribe.

APPENDIX C

Example of a Project-Specific Field Curation Protocol

Example Field Curation Protocol - Texas Lake Data Recovery Project

All artifacts, dating, botanical and faunal samples will be carefully collected and immediately stored in appropriate packaging (see next section). Never work without a properly labeled artifact bag. Artifacts removed from the unit should be placed immediately in the bag, do not "stockpile" them near the unit or in a bucket as they may get separated from the unit or mixed with a different provenience. Never combine artifacts or sediment from different unit-levels.

It is important that you do not pull up artifacts from the floor of your unit or from the walls. Artifacts in the wall of your unit (provided more than half is still firmly embedded) belong in the next unit over and should remain until systematically excavated. Artifacts in the floor of your unit should be left until fully exposed and then recorded on your level form before removing.

Some levels (your supervisor will tell you which) require that you map in all artifacts larger than a quarter. When excavating around stone tools and debitage avoid the use of metal tools, which can scratch or leave a metallic residue on the artifacts – use bamboo (chopsticks work great when sharpened) or wood.

Keep an eye out for clusters of bone. Some excavations yield quite a lot of bison and deer bone for instance. Carefully excavate around the bone without getting too close to it (it's usually pretty fragmentary). If it turns out to be a large bone we may want to pedestal it and encase it in a plaster jacket. The final, micro-excavation will then be done in the lab by an analyst.

All collected materials will be given unique lot numbers and labeled with this number in addition to associated provenience information. All collected materials will be removed from the work site on a daily basis to ensure their safety.

Buckets **-** The soil you remove from your unit will be taken, bucket by bucket, and screened for artifacts. It is very important that each bucket you utilize have a piece of flagging tape tied to the handle identifying the unit, level and bag number that is being screened. A second tag with identical information will be placed IN the bucket prior to filling. This labeling will keep the buckets from being mixed at the screen. Larger stones should not be sent to the screens. First make sure they are non-cultural stones and may be disposed of, then put them in a bucket for removal to the backdirt pile.

Samples **–** Samples, particularly those that might yield radiocarbon dates, are very important and should be taken from the level in situ (rather than from the screen). Keep your eyes open for unusual features or concentrations of items such as shell, bone or charcoal. A 4-liter soil sample will be taken from each level. If you think that you may have found something that should be sampled call your supervisor's attention to it and you will be instructed on how to proceed.

Screening **-** Screening is done through ¼-inch mesh screens with the aid of water from a hose when necessary. Screening is easier if the buckets are not overfilled and can be presoaked before water screening (let them soak for a while). Do not "scrub" the material through/across the screen. This leaves metal marks on the artifacts. Break apart clumped soil (peds) with hands, not a metal trowel. Flakes inside peds can be sharp, so it is advisable to wear gloves while screening. When buckets are brought to the screens line them up according to unit and level so that the screening team can immediately see if more buckets from the level they're working on are ready. When you select a bucket for screening make sure that the information on the flagging tape tied to the handle agrees with the information on the artifact bag you have been given.

Separate bone, shell, lithics etc. when screening and put them in different bags. All of the bags must be labeled and all will carry the same lot number (aka bag number). Smaller bags can go inside the larger ones when you turn them in.

Things to collect from the screen:

ALL lithics – every lithics flake or angular piece that looks even remotely cultural down to the smallest piece in the screen,

Bone – you are likely to see bone fragments, both burned and unburned, and these should be bagged separately,

Shells – snail and bivalve shells should be saved (especially snails from deep levels), fossil shells from the limestone bedrock can be noted in the notes and discarded,

Burned rock – burned rock from the deeper strata could be very important, check with your supervisor as to how much you should save,

Exotic materials – any non-local material like petrified wood, alibates chert, quartz etc. (rule of thumb – if it catches your eye and the material looks unusual, bag it),

Pigments – hematite (red) and limonite (yellow) mineral pigments,

Engraved stones – some small, flat, smooth stones in Central Texas may bear elaborate patterns of delicately engraved lines. These engraved lines have been found both on small hand-sized pieces of limestone as well as on the cortical surface of flakes and other chert objects. Pay careful attention to such stones both in your excavation and in the screen so as not to overlook and discard these important artifacts,

Other – items may appear in the screen and catch your eye such as seeds, burned clay, quantities of charcoal, please call the attention of your supervisor to these items.

Collected artifacts are placed in field collection bags. It is important that each bag have the correct corresponding provenience information. In the field, label 4-mil zip-closure bags using permanent marker with the following information:

SITE *(41TX9999)*

PROJECT *(Texas Lake Mitigation Project)*

LOT NO. *(assigned in field)*

HORIZONTAL PROV. *(Unit#, Quad #, etc.)*

VERTICAL PROV. *(Level and depth (cmbs)*

EXCAVATOR *(digger and note-taker)*

DATE (*date of excavation*)

Features – If features are encountered during the investigations, they will need to be properly mapped, drawn, photographed, and recorded using the appropriate project field forms. The feature should be bisected with half the soil dry or wet screened through 1/8-inch hardware cloth and the remainder saved

as a bulk sediment sample. Features should be excavated by cultural/natural layers or within 10 cm levels and the bulk sediment samples should follow the same procedures.

Field Supervisor - The field records are overseen by the field supervisors. Lot numbers (bag numbers) will be assigned in the field by the supervisor and will remain the same regardless of the number of field bags required to complete a single level of excavation. The field supervisor will record the bag number, unit coordinates, excavation level, and top elevation on the Lot Summary Form before a field bag and level form are issued. Both the field supervisor and the project archeologist will need to initial and date the Lot Summary form. In order to prevent identical lot numbers from being assigned to materials of different provenience, only one binder of Lot Summary Forms will exist for the project and must be onsite in order for new lot numbers to be assigned. When the excavation and screening of a level is complete, the supervisor will enter the bottom elevation, material type(s) and date of completion on the Lot Summary Form. The individual who submits the field bag(s) from that level will then initial and date that it is complete. At the end of each day, a Daily Lot Bag Check-in Form must be turned in to the lab along with the artifact bags collected that day.

Forms - There are five basic field forms with which all project staff should be familiar. The most frequently used will be the Unit Level Form. Less frequently used are the Profile Description Form, Unit Summary Form, and Feature Form, and Feature Continuation Form. Supervisors can answer any questions as to the meanings of any of the items requested on forms. Be sure to fill out all items on every form and to always record as many additional notes as possible.

APPENDIX D

Field Conservation Tips

1.0 HANDLING

- Always assume an object is fragile. The true condition of an object may not be immediately apparent.
- Handle objects as little as possible. Do not pick up objects by handles, rims, or other attachments.
- Avoid bending flexible objects.

2.0 LIFTING

- The method chosen to lift an object out of the ground depends on its strength, size, weight, composition, and condition, as well as the condition of the soil matrix.
- Assess the object condition, then record information, sketch and/or photograph the object before lifting it out of the ground.
- Remove as much dirt surrounding an object as possible before removal. Do not flick or pry an object out of the ground.
- Support the object at all times. A pedestal of dirt may be left underneath the object for support while continuing to excavate around it.
- Lifting an object out of the ground with its surrounding dirt (block lifting) is useful for extremely fragile objects. The appropriate method of block lifting depends on the size and weight of the object and on soil condition.

3.0 BANDAGING AND CONSOLIDATION

- A bandage can be used to support fragile objects once they have been excavated. A bandage consists of gauze or cloth strips wrapped around an object in layers. Adding plaster or resin can strengthen the bandage, but do not glue or plaster a bandage directly to an object. It is critical to apply a separate layer between the bandage and object.
- Backing an object is useful for fragile, flat objects. Backing usually involves the application of a rigid bandage to the object. Some PVA emulsion, Acryloid B-72, or plaster can be used for rigidity. Do not use Elmer's Glue-All®.
- Consolidants should only be used when absolutely necessary and in consultation with a professional conservator. The choice of consolidant will depend on the type and condition of the materials involved. Consolidation should not be attempted on waterlogged materials.
- Consolidants can be applied to fragile objects to join pieces and allow for lifting and handling. Consolidants should have: 1) good adhesive and cohesive properties; 2) achieve good penetration; 3) be durable, stable, and reversible; and 4) not alter the appearance of the material consolidated.
- Do not consolidate any material that will be used for dating or scientific analysis.
- Clean an object thoroughly before applying a consolidant. The most common consolidants are PVA emulsions or resins and Acryloid B-72. Allow the consolidant to dry completely before lifting the object out of the ground.