

Rocky Mountain Herbarium Use Policies

The Use Policies of the Rocky Mountain Herbarium pertain to the three herbaria administered by the Rocky Mountain Herbarium:

1. Rocky Mountain Herbarium (RM)
2. US Forest Service National Herbarium (USFS)
3. Solheim Mycological Herbarium (RMS)

For the purposes of this document, the term “Rocky Mountain Herbarium” and the acronym “RM” refer to all three herbaria, unless explicitly stated otherwise.

If you have any questions concerning the collections, herbarium library, maps, supplies, working spaces, etc., please feel free to ask a member of the herbarium staff or email us.

LOCATION AND HOURS

The Rocky Mountain Herbarium (RM) is located on the second and third floors of the Aven Nelson Building, University of Wyoming campus. It is open 8:00 AM to 5:00 PM, Monday-Friday, except during University closures and holidays. Summer hours may vary depending on field work schedules.

There are no public displays at the herbarium. Persons wishing to access the specimens for research should contact a curator or the director before planning a visit, so that we may assist you.

Free parking (with limited spaces) is available along the east side of 9th Street on the west edge of campus, and along portions of E Iverson Street on the south side of campus. Additional free street parking is available along some sections of the streets (but not all—pay attention to permit signs) in the blocks west of 9th Street. Information about campus parking, including hourly metered parking, parking permits, and permit-only parking lots, can be found on the university’s Transit and Parking Services web page (<https://www.uwyo.edu/transportation/parking/index.html>).

INFORMATION FOR VISITORS

1. It would be greatly appreciated if all visitors **sign the herbarium guest book** upon arrival.
2. Individuals wishing to use the herbarium should check first with an herbarium curator or director. **Making prior arrangements** is strongly encouraged to ensure that the herbarium will be open and staff will be available to provide assistance.
3. Visitors should be given a **quick orientation** to herbarium policies, organization, and proper specimen handling techniques.
4. Before resorting to using the herbarium, have specimens that you want to see definitely in mind. For identification purposes, do not “mull” through the folders on the chance of encountering a

plant similar to the one you are studying. The herbarium is a supplement to, **not a substitute for**, identification manuals or floras.

5. Tours of the herbarium can be given upon request. Prior arrangements are required for group tours.

FOOD AND DRINKS

Bringing food and drinks into the herbarium is discouraged. **Food and drinks should always be kept away from specimens and books.** Drinks should be in enclosed containers with sealing tops to minimize risk of spills. If eating in the herbarium, do so away from specimens and be careful to not leave crumbs or food debris on tables or floors, as these may attract pests. Restrictions around food and drinks may be relaxed somewhat during special events such as identification work parties and open houses.

As a precaution, **washing hands after handling specimens is recommended.** Older specimens were often treated with chemicals such as mercuric chloride or other corrosive/poisonous sublimates to help prevent insect infestations, and some old cabinets have felt door seals impregnated with cyanide of mercury. These specimens and cabinets are often marked to indicate the chemical treatment.

HANDLING SPECIMENS

The herbarium is a permanent record and repository of plant specimens which are irreplaceable. The specimens are to be so handled that they will remain in good shape for tens, hundreds, or even a thousand years hence.

1. Use a stool to remove or replace folders above your head so that specimens are **not damaged by bending.**
2. Be careful when pulling folders out of a cubby to keep sheets within the folder from catching on an exposed edge of the cabinet. Never attempt to slide a specimen out of a closed folder.
3. When carrying folders, they should be **kept horizontal** and held by both hands, not placed at an angle under one's arm. Please limit the size of the stack being carried to the equivalent of one cubby hole. Use a cart to transport larger number of specimens.
4. **Do not bend specimen sheets or folders containing specimens.**
5. **Never turn specimens over like pages in a book.** Due to various methods used to mount specimens, some plants may be loosely attached and may fall off. Furthermore, plant fragments may be loose on the sheet. To handle folders of specimens like pages in a book may cause considerable damage. Instead, take folders to a table or cart, open flat, and examine specimens by keeping them flat and right-side-up.
6. **Do not slide specimens across each other.** The edge of the sheet may catch on and break off part of a specimen below it.

7. The sequence of sheets in yellow and tan folders is usually important because of the geographical sort and **should be maintained**, whereas the sequence of specimens in red folders is inconsequential.
8. Leaving specimens sitting out on a table, cart, or bench while not in use **is strongly discouraged**. Refile specimens as soon as possible. Arrangements can be made with a staff member to temporarily house specimens in working cabinets if they will be used for longer periods of time.
9. In returning folders to a cabinet, use one hand to lift the overlying ones. **Do not use excessive force in pushing a folder back into place**. If more space is needed, point out the problem to a staff member.
10. Return folders to the exact spot in the cabinet where it was removed. If you are at all unsure how to refile folders, set them aside for herbarium staff to refile. As with library books, **misplaced folders may be “lost” indefinitely**.
11. Close cabinet doors after removing or returning specimens. Do not leave cabinet doors open while examining specimens outside the aisle. **Poorly fitting doors should be “forced” closed with your knee and side of leg, not with the toe of your shoe** as cumulative damage to the finish will occur. The handle or latch should be fully engaged to keep the door closed. There are a few cabinets that do not fully close.

MOBILE STORAGE SYSTEM

1. Always check to be certain cabinet doors are closed and aisles are clear of people, stools, ladders, carts, and other objects before moving carriages.
2. Move no more than two carriages at a time. It is best to start moving the first carriage before the second, then allow them to gently come together.
3. Some carriages are very stiff and do not readily move in one direction. These are indicated with notes on the carriage end caps. Follow the instructions on those notes to avoid damaging the carriage gears or chains.
4. Close cabinet doors before leaving an aisle, and remove carts, stools, and other objects, as another worker may need access to an adjacent carriage.

FILING SYSTEM FOR VASCULAR PLANTS

Users of the herbarium should refer to family indexes and maps posted throughout the herbarium for help locating a family or to determine the correct sequence of geographic regions. Aisles and cabinets are labeled with the following information:

- Cabinet labels indicate the starting and ending families, species, and folder colors for the first and last specimens in that cabinet, along with the cabinet number.
- Aisle labels indicate the starting and ending families, species, and folder colors for the first and last cabinets in that aisle, respectively.

1. Vascular plant specimens are arranged first within the following sequence of major groups:
 - a. PTERIDOPHYTES (ferns): room 210, cabinets 1–11
 - b. GYMNOSPERMS (conifers): room 203, cabinets 1–39
 - c. ANGIOSPERMS, MONOCOTS: rooms 205–207, cabinets 1–120
 - d. ANGIOSPERMS, DICOTS: rooms 316, 311 & 303, cabinets 1–515
2. Within each major group, specimens are arranged by family according to the phylogenetic sequence defined by the Angiosperm Phylogeny Group IV.
3. Genera are arranged alphabetically within a family.
 - a. Specimens within each family not identified to genus are placed in INDET. FOLDER(S) at the end of that family.
4. Species within a genus are grouped first by major geographic region:
 - a. WYOMING SPECIMENS of a genus, if any, are filed in RED FOLDERS. These red folders precede yellow or manila (tan) folders of the same genus.
 - b. ROCKY MOUNTAIN SPECIMENS (excluding Wyoming) of a genus, if any, are filed next in sequence, in YELLOW FOLDERS.
 - c. NON-ROCKY MOUNTAIN SPECIMENS (rest of the World) of a genus are filed last in the sequence, in TAN FOLDERS.
5. Species are arranged alphabetically within each major geographic region:
 - a. Within RED and YELLOW folders, every species, subspecies, and variety should have its own folder.
 - b. The first TAN folder(s) within a genus may be A–Z FOLDERS (e.g., *Pinus* A–G, *Pinus* H–M, *Pinus* N–Z), containing multiple species for which there are only 1 or a few sheets. These are grouped together before the individual species folders, not interspersed among them. Note: A–Z folders are not used for Wyoming (RED) or Rocky Mt (YELLOW) specimens.
 - c. SUBSPECIES AND VARIETIES are filed in alphabetical sequence following the corresponding species folders, except the typical subspecies or variety is usually filed first. The typical subspecies or variety may not be given its own named folders; in that case, the typical entity is filed in the species folders.
 - d. HYBRID FOLDER(S), if any, follow at the end of the individual species folders. Hybrid folders are last within a geographical grouping unless indet. folders are present.
 - e. INDET. FOLDER(S) (specimen not identified to species), if any, are the last folders in the appropriate geographical grouping of a genus.
6. The order of individual specimens does not matter within RED folders of a given species, subspecies, or variety. There is no finer geographic sequence in RED folders.
7. Specimens within YELLOW and TAN folders are further sorted by finer GEOGRAPHIC REGIONS that are ordered from east to west and north to south (refer to maps posted in the herbarium). These finer regions are indicated in pencil above the species name on the folder.

- a. The order and sequence for YELLOW FOLDERS is:
 - i. South Dakota (in part, by county)
 - ii. Montana
 - iii. Colorado
 - iv. New Mexico (in part, by county)
 - v. Idaho (in part, by county)
 - vi. Utah (in part, by county)
 - vii. Washington (in part, by county)
- b. The order and sequence for TAN FOLDERS is:
 - i. Greenland
 - ii. Canada—by province, east to west:
 1. Newfoundland, Labrador, Nova Scotia, Prince Edward Island, New Brunswick, Quebec, Ontario, Northwest Territories, Nunavut, Yukon, Manitoba, Saskatchewan, Alberta, British Columbia
 - iii. United States—by region and state, east to west, north to south:
 1. Northeast (ME, NH, VT, MA, RI, CT, NY, NJ, PA)
 2. Southeast (DE, MD, DC, VA, WV, NC, SC, GA, FL, KY, TN, AL, MS, PR)
 3. Midwest (OH, MI, IN, WI, IL)
 4. North-central (MN, IA, MO, ND, SD, NE, KS)
 5. South-central (AR, LA, OK, TX)
 6. Rockies (MT, WY, CO, NM, ID, UT, AZ, NV)
 7. Pacific Coast (WA, OR, CA)
 - iv. Caribbean
 - v. Mexico
 - vi. Central America
 - vii. South America
 - viii. Iceland
 - ix. Spitsbergen
 - x. Europe (west to east)
 - xi. Asia (west to east)
 - xii. Africa (west to east)
 - xiii. Pacific Basin (including, in order: New Guinea, Australia, New Zealand)
8. When a single YELLOW OR TAN folder contains specimens from two or more finer geographic regions, the specimens are grouped and ordered by region within the folder according to the above sequences.

NOMENCLATURAL TYPE SPECIMENS

Type specimens have been segregated and are housed separately from the main collections. **They must be handled with the utmost care and only with permission.** Type specimens are ordered first by major taxonomic groups (same as the main collection) then alphabetically by family, genus, and species. There

is no geographic order to the specimens. Workers who encounter previously unrecognized type specimens in the main collections **should bring them to the attention of herbarium staff**.

WYOMING REFERENCE COLLECTION

This collection contains one sheet of each vascular plant taxon known to occur in Wyoming. It should be used, at least initially, **for most routine identifications** to save wear and tear on the main collection. The **tag(s)** clipped to each sheet gives the name used for the taxon in the herbarium, and it should correspond to the accepted name in the Wyoming Species Checklist. In reality, inconsistencies often exist in the names used in the herbarium, the reference collection, and the checklist. Names in parentheses are those used in selected state, regional, national, and international floras. These specimens must be treated with utmost care, kept stacked neatly, and always returned promptly to the appropriate reference cabinet, **not to the main collection**.

HERBARIUM LIBRARY

The RM Library consists of several parts. The UW LIBRARIES, HERBARIUM BRANCH contains catalogued books and journals which are the property of the UW system. These works are considered reference and are thus **non-circulating**; they must be used within the herbarium. Arrangements can be made for photocopying. The RM REPRINT COLLECTION contains copies of taxonomic revisions and monographs. Finally, there are several hundred books, theses, maps, and place name books which, like the reprint collection, are the property of the herbarium.

ANNOTATIONS

Qualified persons who find specimens with errors in identification should bring these to the attention of herbarium staff so they can be annotated. Do not re-file annotated specimens, as they must first be updated in the RM database and re-photographed.

LOAN POLICY

The Rocky Mountain Herbarium will loan specimens to qualified institutions for scholarly research. Individuals wishing to borrow specimens must partner with an appropriate institution. The borrowing institution must meet minimum standards for security, storage environment, and handling of specimens, and assumes all responsibility for the specimens. Students must request loans through their faculty supervisor. Delinquent loans may delay the processing of new requests and/or prevent future loan requests by the individual borrower or affiliated institution.

Loans are made for one year. Extension of the loan period may be granted upon written request to the curator. No portion of the specimens on herbarium sheets may be removed ("destructive sampling") without prior approval of the curator. Returned loans should be packed carefully and sent via insured and tracked mail service. We reserve the right to request the return of loaned material at any time.

Type material, endangered taxa, specimens judged by the RM curator to be exceedingly fragile, or those which are represented by fewer than five specimens in the RM are generally not considered for loans. At least one specimen per taxon is retained by the RM at all times. However, images may be available through the RM database search, and researchers are encouraged to visit the RM website to view these specimens or visit the RM in person. Loans of individual specimens, no matter the total number of specimens for that taxon, will be made on a case-by-case basis.

Requests for permission to perform destructive sampling of RM specimens (e.g., dissections, pollen or seed removal, removal of tissues for DNA extraction, etc.) are not granted routinely but are decided on a case-by-case basis (see Destructive/Invasive Sampling Policy).

When used in taxonomic research, specimens should be annotated, even when agreeing with previous determination. An annotation label with an updated identification, researcher's name, and date of annotation should be affixed to the specimen prior to return.

Loan requests may be submitted in writing or via email and addressed to the herbarium. Loan requests should include the following information:

- Full name of requestor (and sponsor, if applicable), institutional affiliation, institutional mailing address, email, and phone number.
- Complete taxonomic information, including relevant synonymy, or for individual specimens, identifiers such as collector name and collection number, accession, or barcode.
- Proposed activities to be conducted using the specimens.
- Justification of the need of the specimens for the proposed study.
- Experience of the researcher in handling natural history specimens.
- Summary of previous work on the taxonomic group.

DATABASE TERMS OF USE

The data and images provided by the RM database search may be used freely by individuals and organizations for purposes of basic research, education and conservation. These data and images may not be used for commercial or for-profit purposes, nor be repackaged, resold, or redistributed in any form, without the express written consent of RM.

IMAGE TERMS OF USE

The Image Reproduction Policy of the Rocky Mountain Herbarium pertains to original RM photography of herbarium specimens, analog or digital, and derivative images made from existing transparencies, negatives, prints, and electronic media in the Rocky Mountain Herbarium. Reproduction, display, or distribution of RM images, whole or in part, is permitted for purposes of basic research, education and conservation. Reproduction of the images for commercial or for-profit purposes is prohibited without explicit written permission from RM.

Photographs (analog, digital, and video formats) and scanned archive materials may be used, downloaded, reproduced, displayed, distributed, posted, or reprinted by persons affiliated with academic and/or non-profit organizations, for scholarly purposes only. In all cases of publication and public presentation, "With permission of the Rocky Mountain Herbarium" must be cited, with reference to institutional acronym and accession number when a specific specimen is indicated (e.g. RM 123456). In the case of online images, the barcode and persistent URL should be cited.

ACKNOWLEDGING THE HERBARIUM

Use of RM specimens, data, or images in publications, dissertations and theses, or other scientific reports, should be accompanied by an acknowledgement of the Rocky Mountain Herbarium as the source for the information. The RM expects to receive notification of all publications resulting from work with RM specimens, the RM database, and RM images. This helps us to document the use of specimens in the literature, and helps us to justify continued funding for the collections so that these resources remain available into the future.

RM SPECIMEN DONATION POLICY

The Rocky Mountain Herbarium will consider donations based on their scientific or historical merit. For example, vouchers for scientific research, legacy collections from institutions of higher education, or personal collections of professional or amateur botanists will be considered for inclusion in the RM. Specimens must include adequate data and be of research quality. All potential donations will be evaluated on a case-by-case basis. Contact the curator before making a donation. Any valuation of individual donated specimens, or larger collections, if desired, is the responsibility of the Donor.

RM SPECIMEN EXCHANGE POLICY

The Rocky Mountain Herbarium will enter into specimen exchange agreements with other recognized herbaria. Please contact the RM curator for additional information.

DESTRUCTIVE/INVASIVE SAMPLING POLICY & AUTHORIZATION FORM

The policy detailed below is intended to help the Rocky Mountain Herbarium (RM) balance the preservation and integrity of herbarium specimens with their utilization for scientific research. As a rule, no material may be removed from specimens without prior consent of the Herbarium Curator. Please read this policy statement, complete the agreement form outlined below, and send your request, along with a list of specimens to be sampled and a loan request (if needed), to the Curator via email or mail. Decisions concerning destructive sampling of collections will be made on a case-by-case basis.

Permission for removal of material, when given, is contingent upon adherence to the following guidelines:

1. It is intended that destructive sampling is conducted for purposes of scientific research and the eventual preparation of a scientific manuscript.

2. Leaf material, pollen, spores, fungal tissue, bryophyte fragments, etc. may be removed from specimens only when there is adequate material available. Care must be taken not to damage the scientific value of the specimen. Whenever possible, material from fragment packets on the herbarium sheet should be sampled.
3. Pollen should be removed from no more than one flower per sheet, and the sheet must have more than three flowers except where permission is otherwise granted. The whole flower should not be damaged or removed.
4. Material may not be removed from type collections, from historical specimens, or from taxa represented in the herbarium by fewer than five collections, except in rare instances, and then only following approval by a designated staff member.
5. Material should not be removed from a herbarium sheet for a second time, if the nature of the study is the same, except where permission is otherwise granted.
6. Any DNA sequences derived from the specimen should be deposited into GenBank or EMBL.
7. For large or complicated requests of material for DNA extractions or other studies, researchers will be encouraged to visit RM to select specimens for sampling. Removal of material from specimens selected by the researcher will be made with supervision and approval by appropriate staff. Not only does a personal visit reduce the work required by Herbarium staff, it allows the investigator to make more precise selections based on specimen age and condition, and amount of material in packets or on the sheet.
8. Each specimen sampled must be annotated, indicating the nature of the study, type of material removed, the researcher's name and institutional affiliation, and date of removal. Labels should preferably not exceed ~ 6 x 2 cm in size.
9. All policies related to RM specimens, as stated in the Rocky Mountain Herbarium Use Policies, apply to specimens used for destructive sampling.

Destructive Sampling Request Form

Rocky Mountain Herbarium

If you need to conduct destructive sampling of RM specimens, please complete and sign the form below, and send the form, along with a list of specimens to be sampled and a loan request (if needed), to the Curator, Rocky Mountain Herbarium, Department 4340, 1000 E University Ave, Laramie, WY 82071, U.S.A., or email to RMHerbarium@uwyo.edu. Upon receipt and review of your request, we will contact you concerning RM's decision regarding the request for destructive sampling.

Brief description of research:**Type of material to be sampled (e.g., leaf tissue, pollen):** _____

I have read the Destructive/Invasive Sampling Policy of the Rocky Mountain Herbarium and agree to abide by the policy.

Research Investigator:

Printed name: _____

Email: _____

Signature: _____ Date: _____

Advisor (if the Research Investigator is a student):

Printed name: _____

Email: _____

Signature: _____ Date: _____

For RM Records:

RM loan #: _____ Herbarium: _____

Approved by: _____ Date: _____