#### NC STATE UNIVERSITY

# NCSC HERBARIUM POLICIES AND GUIDELINES

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#### TABLE OF CONTENTS

| § 1. Overview   | 3    |
|---|------|
| 1.1 ABOUT NCSC  |      |
| 1.2 THE COLLECTION  |      |
| 1.3 Services Provided   |      |
| 1.4 USE   |      |
| § 2. Extension Services   |      |
| 2.1 Submitting specimens for identification   |      |
| § 3. Collection Development   |      |
| 3.1 New Accessions  |      |
| 3.1.1 Guidelines for specimen deposits  |      |
| § 4. Research Support   |      |
| 4.1 Loans to other Institutions   |      |
| 4.1.1 Overview  |      |
| 4.1.2 Loan requests   |      |
| 4.1.3 Upon receipt of loan  |      |
| 4.1.4 Specimen storage and handling   |      |
| 4.1.5 Specimen examination and sampling   |      |
| 4.1.6 Specimen annotations.   |      |
| 4.1.7 Transferring loans  |      |
| 4.1.8 Returning loans   |      |
| 4.2 Loans from other Institutions   |      |
| 4.2.1 Overview  |      |
| 4.2.2 Loan requests   |      |
| 4.2.3 Upon receipt of loan  |      |
| 4.2.4 Loan Regulations  |      |
| 4.2.5 Specimen storage and handling   |      |
| 4.2.6 Loan Extensions   |      |
| 4.2.7 Specimen annotations  |      |
| 4.2.8 Packing and return of loans   |      |
| 4.2.9 Specimen Citation and Publication   |      |
| § 5. References   |      |
| Appendix A: Draft Destructive Sampling and Analysis Policy, NCSC Herbarium, Dept. of Plant Biology, North |      |
| Carolina State University   | . 11 |
| Appendix B: Draft NCSC Loan Guideline Acknowledgment Form, NCSC Herbarium, Dept. of Plant Biology,        | ,    |
| North Carolina State University   |      |
| Upon receipt of loan  |      |
| Loan Regulations  |      |
| Specimen storage and handling   |      |
| Loan Extensions   |      |
| Specimen annotations  |      |
| Packing and return of loans   |      |
| Specimen Citation and Publication   |      |
| Appendix C: Current Plant Identification Request Form, NCSC Herbarium, Dept. of Plant Biology, North      |      |
| Carolina State University   | . 16 |

### § 1. OVERVIEW

#### 1.1 ABOUT NCSC

Established in 1898, the herbarium at North Carolina State University is recognized internationally by the *Index* Herbariorum abbreviation "NCSC." Maintained by the Department of Plant Biology, NCSC is committed to teaching, research, and extension service. The Herbarium is used locally by North Carolina State University faculty, graduate, and undergraduate students, as well as by visiting scientists. In addition, through an active loan and exchange program, NCSC serves monographic, floristic, and revisionary research at similar institutions around the world.

#### 1.2 THE COLLECTION

NCSC houses a collection of about 125,000 specimens focused primarily on the flora of North Carolina and the southeastern United States. In addition, to a small type collection, the following groups are well represented:

Poisonous plants
Trees, native and cultivated
Legumes
Grasses
Wetland and aquatic plants

#### 1.3 SERVICES PROVIDED

Committed to research and extension, NCSC provides the following services:

1. Identification of unknown North Carolina plants - both native and cultivated - submitted through the North Carolina Cooperative Extension Service or directly to NCSC (for details see p. 4).

- 2. Information on plants poisonous to humans and livestock.
- 3. Loans of specimens to other herbaria (for details see p. 5).
- 4. Space for researchers and students to examine specimens and literature.

#### **1.4 USE**

With prior arrangement with the Curator, the collection may be used by all qualified faculty, staff, and students from any institution or agency in any state or country, as well as by any qualified amateurs. Persons working with the collection are expected to understand its organization before removing any specimens from the cabinets and to properly refile all specimens taken. Any questions concerning proper positioning of material should be addressed to the Curator. Care is to be maintained for the collection and all specimens at all times including, but not limited to:

- 1. Under no circumstance is any plant material that has not been frozen by Herbarium staff permitted in the herbarium. Persons wishing to bring plant material into the herbarium should contact the Curator well in advance. Specimens are frozen as a means of pest control at -20° C for 48 hours.
- 2. Food is not allowed in the herbarium.
- 3. Specimen sheets must be handled with care. Do not bend, break, or tear the sheets, nor turn them face down.

- 4. Do not leave specimens on counters for extended periods of time or out of the cabinets overnight.
- 5. Any loose plant pieces must be placed in the attached fragment pocket. If a sheet is lacking such a pocket, notify Herbarium staff.
- 6. Under no circumstances may material be removed from a specimen without permission from the Curator. Any dissection of plant parts likewise requires the permission of the Curator.
- 7. Evidence of insect damage should be reported at once.
- 8. No books, theses, or other reference material may be removed from the Herbarium.

## § 2. Extension Services

As a service to citizens of North Carolina, NCSC currently provides information on poisonous plants, as well as free identifications of unknown species. Although identifications are free at the moment, NCSC reserves the right to institute a fee-based service in the future to accommodate the volume of material received.

# 2.1 SUBMITTING SPECIMENS FOR IDENTIFICATION

Plant specimens may be submitted for identification through the North Carolina Cooperative Extension Service or directly to NCSC. Persons interested in obtaining a plant identification should make sure that any material submitted includes adequate twig/stem, leaf, flower, and/or fruit samples. Insufficient

material, such as lone leaves or lone flowers, will not be identified. Persons interested in the identification of a particular species are encouraged to wait until the species either flowers or fruits before submitting a specimen. Submitted material will not be returned unless prior arrangements have been made with the Curator. All packets containing plant samples, must be clearly marked "Contains Plant Material for Identification" and be accompanied by a completed request form (see Appendix C). A separate form is required for each plant sample. Request forms are available from County Extension Agents or NCSC.

# § 3. Collection Development

#### 3.1 NEW ACCESSIONS

To increase the quality, usefulness, and value of the collection, NCSC actively seeks to increase its holdings. To support research of current faculty and staff, NCSC seeks to particularly increase its holdings of eastern Asian taxa, cultivated plants, and New World vines. In addition, faculty and students are encouraged to deposit material at NCSC - especially if specimens represent (1) under-collected species or under-collected regions of North Carolina or the southeastern United States and (2) ecological or economic vouchers. All graduate students at North Carolina State University collecting quality voucher specimens as part of their research should deposit one set of their collections at NCSC.

## 3.1.1 GUIDELINES FOR SPECIMEN DEPOSITS

Enough material should be collected to fit a standard herbarium sheet. Preferably, any collected specimen should bear fertile structures, such as flowers or fruits. Ready-to-mount labels detailing the collection location, date, any particular site or plant qualities or associations, as well as the collector's name and the collection number should accompany all specimens. Labels must be in permanent ink and on 100% rag paper. Laser printed labels are acceptable provided they are on 100% rag paper. Please consult with the Curator if you have any questions regarding specimen deposit or label preparation.

## § 4. Research Support

# 4.1 LOANS TO OTHER INSTITUTIONS

NCSC welcomes requests for specimen loans in support of monographic, floristic, or revisionary research.

#### 4.1.1 Overview

Our loan policy is adapted from the policies of the United States National Herbarium (US) and the University of Florida Herbarium (FLAS), and is similar to that of other herbaria. Requests to borrow specimens are considered only from botanical institutions or departments recognized in the *Index Herbariorum* and are made only to institutions, not individuals. Requests must be made in writing by an official staff member of the institution (usually the Curator or Collections Manager), not by students or non-staff scientists. If a requested loan involves a

significant number of specimens, we encourage the investigator to visit and personally select from the available material. Please do not request type specimens unless and until they are necessary for critical analysis.

Loans are made for one year unless otherwise stipulated by NCSC. If more time is needed, an extension of the loan may be requested through a written request to the Curator. NCSC reserves the right to request the return of its loan material at any time.

Please cite the Herbarium by its accepted acronym "NCSC" in any publications resulting from studies based on our collections. Reprints should be sent to NCSC as they become available.

#### 4.1.2 LOAN REQUESTS

Request for loans should be addressed to the Curator (NCSC) and clearly state:

- 1. For whom the material is being requested and the title and nature of their project.
- 2. The names (including synonyms, if applicable) under which specimens are likely to be filed.
- 3. The geographic area desired for the requested species.
- 4. Whether a selection of material, especially common species, will meet the needs of the investigator.

If the requested taxon is represented in our collection by more than five specimens, it is our policy to retain selected sheets for comparative purposes.

# 4.1.3 UPON RECEIPT OF LOAN Carefully unpack the specimens, but leave type specimens in their special folders. Verify the number and

folders. Verify the number and condition of specimens, then sign, date, and return the enclosed invoice to NCSC.

## 4.1.4 SPECIMEN STORAGE AND HANDLING

Do not practice insect control methods that may damage the scientific value of the specimens. To maximize the potential of the collection for DNA based studies, do not use harsh chemicals, excessive heat, or microwave ovens for insect control. Freezing specimens at -20° C for 48 hours is the preferred method of insect control.

## Herbarium sheets must not be laid face downward, bent, or folded.

Store specimens in dry, sealed cabinets to avoid insect and fungus infestation, and do not leave on countertops or in open storage for extended periods of time.

## 4.1.5 SPECIMEN EXAMINATION AND SAMPLING

Under no circumstances may material be removed from a specimen without permission from the Curator of NCSC. Any dissection of plant parts likewise requires the permission of the Curator. Requests for destructive sampling should accompany the letter requesting the loan and should explicitly state the purpose of the sampling (e.g., DNA, SEM, etc.) and how much material will be needed. Any DNA sequence derived from specimens on loan from NCSC should be deposited at GenBank

(www.ncbi.nim.nih.gov/Web/Genbank/i ndex.html). GenBank accession numbers should be forwarded to NCSC and noted on the specimen annotations.

A copy of any SEM or light photographs taken from any NCSC material should be deposited at NCSC and be labeled with the taxon name, the collector's name and collection number, the NCSC accession number, the magnification, and the method of preparation. If illustrations or sketches result from dissections of flowers, fruits, or seeds of NCSC material, the researcher is requested to return a copy of such work on archival paper to the Curator so that it may be fixed to the specimen sheet to aid others.

Only under rare circumstances will permission be granted for dissection or removal of material from type specimens, specimens collected prior to 1900 or other historical collections, from taxa which are known to be endangered or extinct, or from collections represented at NCSC by fewer than five collections.

If authorization for sampling is granted:

- 1. The borrower must affix a proper annotation label to the herbarium sheet(s) that includes the name and institution of the researcher, the date of removal of material from the specimen, and the purpose of the removal (e.g., anatomy, palynology, etc.).
- 2. Samples may be removed from a specimen by only the permitted investigator, who should be prepared to share his preparations as described above.
- 3. Samples should first be obtained from the material in the fragment pocket. Any excess specimen parts should be placed in the fragment pocket. If a fragment pocket does not already exist on a sheet, one should be attached if needed.

# 4.1.6 SPECIMEN ANNOTATIONS Investigators should properly annotate each specimen studied. Annotations should be typewritten or made in permanent ink on acid-free, 100 % cotton paper labels of approximately 2.5 x 10 cm, and should at a minimum explicitly state:

The accepted name of the taxon, the name of the investigator, and the date (at least the year) of the identification. Type specimens should also be annotated with the basionym, citation of the publication, and an indication of the status (e.g., holotype, isotype, syntype, paratype, etc.).

Institutional identification on annotation labels is encouraged. The annotation label should be glued to the herbarium sheet, above or near the original label whenever possible. Please do not merely insert annotation labels loosely in with the specimens, as they may be lost during the packing and unpacking process.

Existing notes, labels, annotations, etc., must never be removed, obscured, or altered. Amplification of label data obtained from duplicates on loan from other herbaria is greatly appreciated. Please note such information on an annotation label, citing the herbarium sheet from which the data originated.

Mixed collections should be clearly delineated and each element annotated separately using an appropriate annotation label. Otherwise, do not write directly on the herbarium sheet.

Please also annotate any separate fruits

or bulky specimens that correspond to a particular specimen sheet.

#### 4.1.7 Transferring Loans

Specimens must not leave the premises of the borrowing institution unless (1) prior commitment to accept transfer is obtained from the proposed recipient institution, and (2) prior permission is granted in writing by the Curator of NCSC. The proposed recipient institution must be a qualifying institution or department as stipulated in § 4.1.1.

#### 4.1.8 RETURNING LOANS

Specimens should be packed similarly to how they were received. Place each specimen sheet between an interleaving, folded sheet of, preferably unprinted, newsprint, to facilitate association of any fragments loosening during shipment with the proper specimen. Securely bundle stacks of specimens, no more than 15 cm (6 in.) high, between cardboard sheets for support. Pack bundles securely in sturdy shipping boxes, allowing for no movement of the material. NCSC collections borrowed by institutions outside the United States should be returned by airmail.

We would appreciate a list of synonyms derived from the study of our specimens, following publication. Cross-references can then be placed in our cabinets to facilitate proper filing of specimens not annotated by the researcher.

# 4.2 LOANS FROM OTHER INSTITUTIONS

#### 4.2.1 OVERVIEW

Specimen loans can be requested from other institutions to support pertinent

research by NC State University faculty, graduate students, and associated researchers. The request of loans comes with the responsibility to be mindful in the handling of specimens as any neglect may affect inter-institutional cooperation, result in suspension of loan services, and damage the research capacity at NC State University.

#### 4.2.2 LOAN REQUESTS

As institutions generally do not accept loan requests from individuals, a request must be issued by the Curator of the herbarium. NC State University faculty, students, and associated researchers should consult with the Curator and be prepared to provide:

- 1. The title and nature of the study for which the specimens are needed.
- 2. The expected time required for the study
- 3. A complete species list, including any synonymy, of requested specimens
- 4. A list of the herbaria acronyms (following Index Herbariorum) from which specimens are to be requested.

Requests for permission to sample or remove material from specimens (e.g., for SEM, DNA, anatomy, palynology, etc.), must accompany the initial request for specimens so that the lending institution can review the suitability of material for this purpose.

4.2.3 UPON RECEIPT OF LOAN Under supervision from the Curator, carefully unpack and count the loaned specimens. Type specimens should remain in their special folders. The unprinted newsprint used for packing all

specimens may be removed. Save all packing materials, including the box if it remains usable, for later re-shipment. Verify the number and condition of specimens, making sure to compile a list by collector name and collection number. Carefully note any damage to specimens. Make sure all specimens are marked with the lending institutions accession seal. If a seal is missing, lightly pencil in the institutions acronym on the sheet to avoid confusion in returning the loan. Multiple loans from institutions must be distinguished as each must be returned under the loan number under which it was originally sent.

#### 4.2.4 LOAN REGULATIONS

All regulations provided from the lending herbaria must be strictly followed. Under no circumstance may material be removed from any sheets without the prior approval of the lending herbarium. As annotation guidelines may differ from institution to institution, researchers should carefully check the institution's policy.

## 4.2.5 SPECIMEN STORAGE AND HANDLING

Incoming specimens will be frozen at -20° C for 48 hours as a method of insect control. Specimens will then be stored in dry, sealed cabinets to avoid insect and fungus infestation and must not be left on countertops or in open storage for extended periods of time. Herbarium sheets must be handled carefully and not be laid face downward, bent, or folded. Notify the Curator immediately of any loose plant pieces, as well as, of any signs of insect infestation. Write any comments on an annotation label, never on the specimen or its collection label.

#### 4.2.6 LOAN EXTENSIONS

Should an extension of a loan become necessary, advise the Curator at least two months before the loan becomes due, providing:

- 1. The name of the lending institution.
- 2. The number or date of the loan
- 3. Your project title and what progress you have made on your project
- 4. The length of extension requested. [Be aware that institutions typically grant extensions for only one year at a time (six months for types).]

#### 4.2.7 SPECIMEN ANNOTATIONS

Researchers should properly annotate each specimen studied. Annotations should be typewritten or made in permanent ink on acid-free, 100 % cotton paper labels of approximately 2.5 x 10 cm, and should at a minimum explicitly state:

The accepted name of the taxon, the name of the investigator, and the date (at least the year) of the identification. Type specimens should also be annotated with the basionym, citation of the publication, and an indication of the status (e.g., holotype, isotype, syntype, paratype, etc.).

Institutional identification (as "NCSC") on annotation labels is encouraged. As annotation guidelines (particularly the method of placement and glueing) may differ from institution to institution, researchers should carefully check the lending institution's policy before affixing any labels.

## 4.2.8 PACKING AND RETURN OF LOANS

Investigators are responsible for providing appropriate labor to prepare loans for return. Specimens must be sorted by institution, carefully counted, and cross-checked with the original acknowledgment invoice. Each specimen should be covered in the original packaging material it was received in. Bundles must be secured in boxes to allow for no movement of material. See the Curator for invoices that must be placed in each box. As the preparation of shipping invoices can take a significant amount of time, inform the Curator at least one month before a loan is to be returned.

Students must annotate and return all loans prior to graduation. Otherwise, a hold will be placed on graduation with the University Registrar.

## 4.2.9 SPECIMEN CITATION AND PUBLICATION

Unless otherwise requested, specimens should be cited by the acronym of the lending herbarium as accepted in the Index Herbariorum and the accession number. Reprints of any resulting publications should be provided to NCSC and the lending institution as they become available.

## § 5. References

- Bridson, D. and L. Forman. 1992. The herbarium handbook. Royal Botanic Gardens, Kew.
- FLAS Staff. 2000. Loan Guidelines. University of Florida Herbarium (FLAS), Gainesville.
- Johnson, L. 1997. Herbarium guidelines. North Carolina State University Herbarium (NCSC), Raleigh.
- Metsger, D.A. and S.C. Byers. 1999.

  Managing the modern herbarium: an interdisciplinary approach. Elton-Wolf Publishing, Vancouver.
- Nevling, L.I., Jr. 1973. Report of the committee for recommendations in desirable procedures in herbarium practices and ethics, II. Brittonia 25: 307-310.
- Perkins, K.D. 1997. Collections Use Policies. University of Florida Herbarium (FLAS), Gainesville.
- Perkins, K.D. 1997. Destructive Analysis of Herbarium Specimens. University of Florida Herbarium (FLAS), Gainesville.
- Stuessy, T. and S.H. Sohmer. 1996.
  Sampling the green world:
  Innovative concepts of collection, preservation, and storage of plant diversity. Columbia University Press, New York.
- US Staff. 2000. Loan guidelines for the United States National Herbarium (US). National Museum of Natural History, Washington, D.C.

Appendix A: Draft Destructive Sampling and Analysis Policy, NCSC Herbarium, Dept. of Plant Biology, North Carolina State University

Comprising a valuable collection at a land-grant institution, NCSC has a legal and professional obligation to maintain the physical integrity of its specimens for the public good. In managing its collection, NCSC seeks to balance the necessity of specimen preservation with the opportunity of specimen utilization for research.

It is the general policy of NCSC that under no circumstances may material be removed from a specimen without permission from the NCSC Curator. Any dissection of plant parts likewise requires the permission of the Curator.

Requests for destructive sampling should be addressed to the Curator and accompany the loan request letter if applicable. The request should explicitly state the purpose of the sampling (e.g., DNA, SEM, etc.) and how much material will be needed.

Only under rare circumstances will permission be granted for dissection or removal of material from type specimens, specimens collected prior to 1900 or other historical collections, from taxa which are known to be endangered or extinct, or from collections represented at NCSC by fewer than five collections.

#### IF AUTHORIZATION FOR SAMPLING IS GRANTED:

- 1. The borrower must affix a proper annotation label to the specimen sheet(s) that includes the name and institution of the researcher, the date of removal of material from the specimen, the purpose of the removal (e.g., anatomy, palynology, etc.), the method of DNA extraction (if applicable), as well as the success or failure of the extraction procedure.
  - ♦ Any DNA sequence derived from specimens on loan from NCSC should be deposited at GenBank (http://www.ncbi.nlm.nih.gov/Genbank/index.html). GenBank accession numbers should be forwarded to NCSC and noted on the specimen annotations.
  - ♦ A copy of any SEM or light photographs taken from any NCSC material should be deposited at NCSC and be labeled with the taxon name, the collector's name and collection number, the NCSC accession number, the magnification, and the method of preparation.
  - ♦ If illustrations or sketches result from dissections of flowers, fruits, or seeds of NCSC material, the researcher is requested to return a copy of such work on archival paper to the Curator so that it may be fixed to the specimen sheet to aid others.
- 2. Samples may be removed from a specimen by only the permitted investigator, who should be prepared to share his preparations as described above.
- 3. Samples should first be obtained from the material in the fragment pocket. Any excess specimen parts should be placed in the fragment pocket. If a fragment pocket does not already exist on a sheet, one should be attached if needed.

# NCSC HERBARIUM POLICIES AND GUIDELINES I have read the above destructive sampling and analysis regulations and agree to adhere to this policy. Accepted: \_\_\_\_ \_Date:\_\_\_\_\_ Signature of Investigator

Appendix B: Draft NCSC Loan Guideline Acknowledgment Form, NCSC Herbarium, Dept. of Plant Biology, North Carolina State University

Specimen loans can be requested from other institutions to support pertinent research by NC State University faculty, graduate students, and associated researchers. The request of loans comes with the responsibility to be mindful in the handling of specimens as any neglect may affect inter-institutional cooperation, result in suspension of loan services, and damage the research capacity at NC State University.

As institutions generally do not accept loan requests from individuals, a request must be issued by the Curator of the herbarium. NC State University faculty, students, and associated researchers should consult with the Curator and be prepared to provide:

- 1. The title and nature of the study for which the specimens are needed.
- 2. The expected time required for the study
- 3. A complete species list, including any synonymy, of requested specimens
- 4. A list of the herbaria acronyms (following the *Index Herbariorum*) from which specimens are to be requested.

Requests for permission to sample or remove material from specimens (e.g., for SEM, DNA, anatomy, palynology, etc.), must accompany the initial request for specimens so that the lending institution can review the suitability of material for this purpose.

#### UPON RECEIPT OF LOAN

Under supervision from the Curator, carefully unpack and count the loaned specimens. Type specimens should remain in their special folders. The unprinted newsprint used for packing all specimens may be removed. Save all packing materials, including the box if it remains usable, for later re-shipment. Verify the number and condition of specimens, making sure to compile a list by collector name and collection number. Carefully note any damage to specimens. Make sure all specimens are marked with the lending institutions accession seal. If a seal is missing, lightly pencil in the institutions acronym on the sheet to avoid confusion in returning the loan. Multiple loans from institutions must be distinguished as each must be returned under the loan number they were originally sent under.

#### LOAN REGULATIONS

All regulations provided from the lending herbaria must be strictly followed. Under no circumstance may material be removed from any sheets without the prior approval of the lending herbarium. As annotation guidelines may differ from institution to institution, researchers should carefully check the institution's policy.

#### SPECIMEN STORAGE AND HANDLING

Incoming specimens will be frozen at -20° C for 48 hours as a method of insect control. Specimens will then be stored in dry, sealed cabinets to avoid insect and fungus infestation and must not be left on countertops or in open storage for extended periods of time. Herbarium sheets must be handled carefully and not be laid face downward, bent, or folded. Notify the Curator immediately of any loose plant pieces, as well as, of any signs of insect infestation. Write any comments on an annotation label, never on the specimen or its collection label.

#### LOAN EXTENSIONS

Should an extension of a loan become necessary, advise the Curator at least two months before the loan becomes due, providing:

- 1. The name of the lending institution.
- 2. The number or date of the loan
- 3. Your project title and what progress you have made on your project
- 4. The length of extension requested. [Be aware that institutions typically grant extensions for only one year at a time (six months for types).]

#### SPECIMEN ANNOTATIONS

Researchers should properly annotate each specimen studied. Annotations should be typewritten or made in permanent ink on acid-free, 100 % cotton paper labels of approximately 2.5 x 10 cm, and should at a minimum explicitly state:

The accepted name of the taxon, the name of the investigator, and the date (at least the year) of the identification. Type specimens should also be annotated with the basionym, citation of the publication, and an indication of the status (e.g., holotype, isotype, syntype, paratype, etc.).

Institutional identification (as "NCSC") on annotation labels is encouraged. As annotation guidelines (particularly the method of placement and glueing) may differ from institution to institution, researchers should carefully check the lending institution's policy before affixing any labels.

#### PACKING AND RETURN OF LOANS

Investigators are responsible for providing appropriate labor to prepare loans for return. Specimens must be sorted by institution, carefully counted, and cross-checked with the original acknowledgment invoice. Each specimen should be covered in the original packaging material it was received in. Bundles must be secured in boxes to allow for no movement of material. See the Curator for invoices that must be placed in each box. As the preparation of shipping invoices can take a significant amount of time, inform the Curator at least one month before a loan is to be returned.

Students must annotate and return all loans prior to graduation. Otherwise, a hold will be placed on graduation with the University Registrar.

#### SPECIMEN CITATION AND PUBLICATION

Unless otherwise requested, specimens should be cited by the acronym of the lending herbarium as accepted in the Index Herbariorum and the accession number. Reprints of any resulting publications should be provided to NCSC and the lending institution as they become available.

| I have read the NCSC guidelines on incoming loans and agree to handle all loa<br>NCSC for my research in accordance with the NCSC guidelines as described a |      |  |  |  |
|---|------|--|--|--|
| Printed Name of Researcher  |      |  |  |  |
| Signature of Researcher   | Date |  |  |  |

 $Appendix \ C: \ Sample \ Plant \ Identification \ Request \ Form, \ NCSC \ Herbarium, \ Dept. \ of \ Plant \ Biology, \ North \ Carolina \ State \ University$ 

HERBARIUM (NCSC), DEPARTMENT OF BOTANY, NORTH CAROLINA STATE UNIVERSITY

| FROM:  | Agent: _<br>County: _   |  |   | Date:  |
|--|---|--|---|--|
|  | Email: Phone: Address:  |  |   | Mail samples to: Herbarium (NCSC) Department of Plant Biology  |
|  |   |  |   | Campus Box 7612  |
| SAMPLE   | No.:  | (Use separate sheet for  | r each sample)  | NC State University<br>Raleigh, NC 27695-7612  |
|  | SPECIA  | MEN COLLECTIO  | N AND MAILING   | INSTRUCTIONS   |
|  | rhizomes  | s complete a specimen as po<br>s, tubers.  | _   | eaves attached, basal leaves (if any), flowers, fruits, bulbs,   |
| Localii  | rhizomes 3. Press and the speci 4. Seal the 6   | s complete a specimen as post, tubers.  dry the specimen in a fold of men, place in a plastic bag, a provelope or box and pack to  | ossible, including stem with lead<br>of newspaper weighted with a<br>and send immediately. Numb   | board or heavy box for a few days; or, blot excess water fr  |
| Localii  | rhizomes 3. Press and the speci   | s complete a specimen as post, tubers.  dry the specimen in a fold of men, place in a plastic bag, a provelope or box and pack to  | ossible, including stem with lead<br>of newspaper weighted with a<br>and send immediately. Numb   | board or heavy box for a few days; or, blot excess water frer specimens if needed.                                       |
|  | rhizomes 3. Press and the speci 4. Seal the e   | s complete a specimen as post, tubers. dry the specimen in a fold omen, place in a plastic bag, a chivelope or box and pack to COUNTY  | ossible, including stem with lead of newspaper weighted with a land send immediately. Numb prevent breaking or crushing   | board or heavy box for a few days; or, blot excess water frer specimens if needed. the plant. Enclose this sheet.  STATE |
| Навітат  | rhizomes 3. Press and the speci 4. Seal the e   | s complete a specimen as post, tubers. dry the specimen in a fold omen, place in a plastic bag, a chivelope or box and pack to COUNTY  | ossible, including stem with leads of newspaper weighted with a land send immediately. Numb prevent breaking or crushing  | board or heavy box for a few days; or, blot excess water frer specimens if needed. the plant. Enclose this sheet.  STATE |
| HABITAT<br>GROWIN  | rhizomes 3. Press and the speci 4. Seal the e TY OF PLANT: The Forest, field, G: Wild or cul  | s complete a specimen as post, tubers. dry the specimen in a fold of men, place in a plastic bag, a shvelope or box and pack to provide the country  COUNTY  aquatic/wetland, garden, yastivated (circle one)  | ossible, including stem with lead of newspaper weighted with a land send immediately. Numb prevent breaking or crushing  CITY  ard, crop (circle one)                     | board or heavy box for a few days; or, blot excess water frer specimens if needed. the plant. Enclose this sheet.  STATE |
| HABITAT<br>GROWIN<br>HABIT: T                                | rhizomes 3. Press and the speci 4. Seal the e TY OF PLANT: The Forest, field, G: Wild or cul Tree, shrub, he  | s complete a specimen as post, tubers. dry the specimen in a fold of men, place in a plastic bag, a envelope or box and pack to provide the complete of the co | ossible, including stem with lead of newspaper weighted with a send immediately. Numb prevent breaking or crushing  CITY  ard, crop (circle one)  ximate age or size      | board or heavy box for a few days; or, blot excess water frer specimens if needed. the plant. Enclose this sheet.        |
| HABITAT<br>GROWIN<br>HABIT: T                                | rhizomes 3. Press and the speci 4. Seal the 6 TY OF PLANT: The Forest, field, G: Wild or cul Tree, shrub, he HER IMPORTAN                                   | s complete a specimen as post, tubers. dry the specimen in a fold of men, place in a plastic bag, a shrvelope or box and pack to provide the complete of the c | ossible, including stem with lead of newspaper weighted with a send immediately. Numb prevent breaking or crushing  CITY  ard, crop (circle one)  ximate age or size      | board or heavy box for a few days; or, blot excess water for specimens if needed. the plant. Enclose this sheet.         |
| HABITAT GROWIN HABIT: 1 ANY OTI ANY INF *For more etc.) see: | rhizomes 3. Press and the speci 4. Seal the e TY OF PLANT: The Forest, field, G: Wild or cult Tree, shrub, he HER IMPORTAN ORMATION REC THE information reg | complete a specimen as post, tubers. dry the specimen in a fold of men, place in a plastic bag, a shelpe or box and pack to provide the complete of the comple | ossible, including stem with lead of newspaper weighted with a land send immediately. Numb prevent breaking or crushing  CITY  ard, crop (circle one)  ximate age or size | board or heavy box for a few days; or, blot excess water for specimens if needed. the plant. Enclose this sheet.         |

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